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FROM THE FUND
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LATIN-AMERICAN HISTORY
AND ECONOMICS

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MEXICO

ITS

TRADE, INDUSTRIES AND RESOURCES

BY

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Literary and Historical Works on the Mexican Republic. Member of the Mexican Geographical and Statistical Society, and of others of the same class in Mexico. Corresponding Member of the Geographical Societies of Madrid, Paris, Rome and Lisbon.

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INTRODUCTION.

THE subjects treated of in this work have been distributed under the following sixteen chapters:

I. Institutions.

II. Political divisions of the country, territorial extent and population.

III. Public Finances.—National Debt.—Banks.—Real Estate.

IV. Maritime movement.—Foreign navigation.—Arrivals and departures of shipping.—Foreign navigation, by flags.—Foreign ports that are in commercial connection with Mexican ports.—Foreign navigation by destinations.—General maritime movement.—Mexican consulates abroad.—Equivalents for foreign money in Mexican dollars, for the payment of consular dues.—Light houses in the ports.

V. Foreign Commerce.—Importations, during the year 1888 to 1889.—Mexican ports of entry.—Branches of importation.—Whence imported.—Exportation.—Ports and Frontier Custom houses through which the exportation has been made.—Destination of the

merchandise exported.—Exportation for the year 1889 to 1890.

VI. Industry.—Raw material.—Cotton Factories. —Cotton whence received.—Woolen cloth factories.— Paper, crockery and glass factories.

VII. Public instruction.—Number of schools and pupils attending them.—Expenditure by the Government and the Municipality.—Secondary, Superior, and Professional instruction.–Public Libraries.–Museums. Scientific and Literary Societies.—Periodical publications.

VIII. Animal kingdom.

IX. Agriculture.—Climate and vegetable productions in general.—Principal crops and their products. —Annual production.

X. Colonies.—Principal provisions of the colonization law.—Colonies established.—Table showing the old Mexican measures and the present legal system.

XI. Mining.—Description of the mines in operation. —Present mining law.—Precious metals taken to the mint.—Coinage.—Exportation of ore.

XII. Railroads.—Lines constructed and in operation in 1892.—Movement of freight and passengers in 1890.

XIII. Telegraphs.—Federal lines.—State lines and those ceded to them provisionally by the Federal Government.—Private lines.—Railroad lines.—Telephones.

XIV. Post office.—Interior service.—Exterior service.—Tariffs.—Annual movement of correspondence. —Products.

XV. Descriptive section.—Mountain formation.—Hydrography, including the coasts and the springs of mineral waters.

XVI. Historical section.

The results obtained by the comparison of the data set forth in these chapters, with those of the preceding years, demonstrate that the country has in no way ceased to progress.

The population in 1880 was.....	9.908,011
„ „ „ 1890 „	11.635,378
showing an increase for the ten years of	1.727,367

or say 1.75 per cent per annum.

The revenues of the Federation have considerably increased.

In 1880 they reached the sum of...	$ 21.936,156
and in 1891.....	38.324,604
showing a increase of.....	$ 16.388,448

The revenues of the States for the first of those years reached a total of.....	$ 7.011,962
and for the second.....	10.345,190
showing an increase for the 11 years of	$ 3.333,228

The Municipal revenues, without counting those of the States of Chihuahua, Durango, San Luis Potosí, Sinaloa and Zacatecas, the reports from which have not been received, ascended in 1890 to $ 6.295.599.

The effective value of Real Estate is not even now known, as the reports given by the State Governments only refer to the fiscal values on which taxes are collected.

These estimated values are shown in their proper place, and give the following results:

Rural property.....	$ 237.669,173
Town property.....	258.403,185
Total.....	$ 496.072,358
In 1880, the above property was valued at.....	366.055,052
Showing a difference of.....	$ 130.017,306

This remarkable increase in the fiscal valuation of Real Estate, proceeds from the new and numerous buildings, which have been erected within the last ten years and especially in the capital; from the continual improvements which are made on old buildings and from the rectifications which are yearly made on the preceding valuations. Even with these rectifications, the fiscal valuations are far from showing the real value of the property, which can be safely estimated at $ 1,500.000,000, this estimate being founded on the re-

ports which have been consulted, and according to which it appears than the declarations filed in the tax offices of the different States, only show two thirds of the real value of the property.

With respect to foreign commerce the following table shows the development which has taken place during the last few years.

IMPORTS.

VALUE OF IMPORTS AND DUTIES IN MILLIONS OF DOLLARS.

NATIONS.	1874 to 1875.		1888 to 1889.		Differences.	
	Value.	Duties.	Value.	Duties.	Value.	Duties.
Germany	1,66	0,70	2,84	2,37	+ 1,18	+ 1,61
Spain	1,33	0,60	1,92	1,18	+ 0,59	+ 0,58
France	4,45	1,80	4,96	3,85	+ 0,51	+ 2,05
England	12,52	5,20	6,34	5,10	— 6,18	— 0,10
United States	7,13	2,45	22,67	0,17	+15,54	+ 5,72
South America	0,21	0,07	0,29	0,10	+ 0,08	+ 0,03
Italy, Switzerland, Austria, Belgium, Holland, Portugal, Turkey, Sweden, Russia	.....	.....	0,89	0,61	+ 0,89	+ 0,51
India, China, Algeria	.....	.....	0,12	0,16	+ 0,12	+ 0,16
	27,30	11,82	40,03	22,48	+12,73	+10,66

These data show, that whilst the imports from the United States have trebled in value, those from England have fallen 50 per cent, the latter nation ceding to the former the place of preference which it occupied in the Mexican trade, and that France, Germany and Spain have each preserved the importance of their commercial relations, their imports having developed a proportional increase.

The order of importance of the nations trading with

Mexico, is as follows, giving each one its respective place in every branch of importation:

1. Goods duty free.—United States, England, Spain, France and Germany.

2. Cottons.—United States, England, France and Germany.

3. Linen and hemp.—England, Germany, United States and France.

4. Woollens.—France, United States, England, Germany and Belgium.

5. Silks.—France, United States, England.

6. Silks with mixtures.—France, United States, England.

7. Food products.—United States, France, Spain, Germany, India, England, Italy and Belgium.

8. Stones and earth.—France, United States and Italy.

9. Crystal and porcelain.—United States, Germany, France and England.

10. Gold, silver and platinum.—France, Germany, United States.

11. Iron and steel.—United States, England, Germany; France and Belgium.

12. Copper and its alloys.—United States, France, Germany and England.

13. Lead, tin and zinc.—Germany, United States, France and England.

14. Fancy goods.—United States, Germany, France, England, Italy.

15. Machinery and apparata.—United States, Germany and France.

16. Coach and wagon material. — United States, France.

17. Arms, powder and ammunition.—United States, Spain.

18. Wood and its manufactures.—United States, Germany, France, Austria.

19. Paper, paste board and their applications.—United States, Spain, France, Germany, Italy and England.

20. Leather goods.—United States, France, Germany and England.

21. Drugs and chemical products.—United States, France, Germany England and Spain.

22. Sundry articles.—United States, France, Germany, Spain, England, Holland and Belgium.

EXPORTS.

VALUE OF THE MERCHANDISE EXPORTED TO THE COUNTRIES SHOWN, IN MILLIONS OF DOLLARS.

Germany	0.44	2.06	+ 1.62
Spain	0.76	0.66	— 0.10
France	5.73	3.50	— 2.22
England	9.22	12.54	+ 3.32
United States	10.36	40.85	+30.49
South America and other countries	0.81	0.54	— 0.27
	27.32	60.15	+32.83

In precious metals	$ 38.780,000
In merchandise	21.037,000
	$ 60.150,000

The above figures show the importance which has been acquired by the export trade with the United States, England and Germany, whilst it diminishes with France and Spain.

In the total amount of the exports, the United States represent	67.9 p%
England	21.0 „
France	5.6 „
Germany	3.4 „
Spain	1.1 „
Other countries	1.0 „

In order to enable the reader to fully appreciate the increase or the exports in their most important branches, I would draw attention to the following comparative table.

ARTICLES.	VALUE. 1874 to 1875.	VALUE. 1888 to 1889.	Differences.
Jewelry	141,680	20,913	—120,797
Live stock	90,000	587,063	+497,063
Indigo	136,758	11,987	—124,671
Sugar	82.851	40,880	— 41,971
Cocoa	75,728	231	— 75,497
Coffee	588,587	3.896,034	+ 3.307,447
Coal	2,745	350,170	+347,425
Copper		817,989	+817,989
Chicle	3,707	595,636	+591,929
Pearl shells and mother of pearl	91,190	32,643	— 64,547
Beans	34,424	151,145	+116,721
Fruit	9,823	53,612	+ 43,789
Cochineal	149,433	„	—149,433
Henequen	611,103	6.872,592	+6.261,489
Fibre and cordage	351,513	594,118	+242,605
Wool	71,382	90,566	+ 90,183

ARTICLES.	VALUE. 1874 to 1875.	VALUE. 1888 to 1889.	Differences.
Woods	1,610,879	1.390,241	—220,632
Honey	22,822	61,789	+ 38,967
Orchilla	98,566	12,535	— 86,031
Copper ores		13,775	+ 13,775
Pearls	14,255	35,000	+ 20,745
Skins	2.979,817	2.011,128	—968,689
Lead		467,737	+467,737
Broom root		472,050	+472,050
Tobacco	36,352	971,885	+935,533
Vanilla	509,023	926,903	+419,880

The above data show: first, the remarkable development that from day to day has taken place in the exportation of certain products, such as henequen, coffee, broom root, chicle, coal, lead, copper, ixtle, tobacco, vanilla and live stock; secondly, the continued trade in other branches, although these are subject to a rise and fall in prices according to the more or less demand for them in the markets, such as sugar, woods of all kinds, pearls, mother of pearl, and skins of animals; and thirdly, the successive disappearance in our export trade, of several articles which at one time were largely exported, such as indigo, cochineal, and orchilla weed.

The manufacturing industries have also been greatly developed, both by the establishment of new factories at a great cost, and by the instalation of modern machinery. The yarns and ordinary domestics have been substituted by white calicoes of different degrees of fineness and largely consumed throughout the country. The cloths, kersemeres, carpets and other woollen tis-

sues, both of a fine and ordinary class, supply a great part of the population, and in their respective classes compete with the foreign fabrics.

The hundred factories for the weaving of cotton cloth, represent a value of $ 15.000,000 and have a production of four and a half millions of pieces of different tissues per annum, with a value of 11 to $ 12.000,000.

From the data which have been collected, it appears that after deducting expenses, the net profit on the capital employed in the factories is from 10 to 15 per cent per annum.

We have very few data with respect to the cotton industry in the past, and can therefore not arrive at an exact judgement of the progress which has taken place in this branch of the public wealth.

Public education is the foundation of the prosperity of a nation. The authorities throughout the country, being fully convinced of this truth, have done all in their power to favor this important branch of the administration, and have opened new schools and declared instruction obligatory.

The number of primary schools existing in

1880, was	8,536
1890 „	9,039
Increase	503

Number of pupils in 1880,	408,684
„ „ 1890	375,369
Decrease	33,315

This difference arises from the absence of reports from 10 States of the Republic, as shown in page 106.

Agriculture, which is the principal source of public wealth, has not as yet reached the development that it might when we consider the favorable conditions of the soil; but nevertheless, the products which are shown in the tables on this subject prove its importance and its advances, which although slower than the rate of progress in other branches, still form a valuable factor in our national wealth.

The most difficult statistics to compile, after those relating to industrial establishments, are those which refer to agriculture, and these have only lately commenced to arrive with a little regularity. It is therefore useless to attempt to make any comparisons between the products af the present day and those of previous years, as the result would be absolutely unreliable.

For the present I must therefore content myself with informing my readers that all the articles detailed in chapter IX, find an easy market in the country, and that many of them are articles of export with a continually increasing demand, such as coffee, tobacco, vanilla, beans, broom root, henequen, ixtle and many other fibres which are so abundantly found throughout the country.

The colonies established in the Republic by the direct action of the government have been definitely organized and the colonists have refunded the advances

received. Consulting the works which treat of these colonies I have acquired the certainty that the sacrifices made by the Government have been by no means useless, and that the establishment of the first colonies has been followed by the formation of others with a bright future before them.

	Colonies.	Colonists.
In 1885 there were.....	7	3,274
In 1889 „ „	23	7,019
In 1892 „ „	27	13,977

The colonists principally occupy themselves in agriculture and a few other branches of industry.

The introduction of precious metals into the mints, and the exportation of the same, show the condition of the important industry of mining in this country.

Including shipments abroad, this amount reached $25.904,448, of which, $24.314,782, was silver, and $1.089,702 was gold.

The amounts coined during the financial year of 1890 to 1891, reached the sum of $24.764,402, as shown in the following table:

MINTS.	Silver.	Gold.	Total.
Alamos.....	515,500	27,900	543,400
Culiacan.....	852,502	14,889	867,391
Chihuahua.....	2.082,729	47,400	2.130,129
Durango.....	1.292,548	„	1.292,548
Guadalajara.....	1.752,350	„	1.752,350
Guanajuato	3.597,850	27,500	3.625,350
Hermosillo.....	562,960	„	562,960
Carried forward...	10.656,439	117,689	10.774,128

MINTS.	Silver.	Gold.	Total.
Brought forward...	10.656,439	117,689	10.774,128
Mexico	7.910,200	169,731	8.079,931
Oaxaca	224,600	,.	224,600
San Luis Potoaí....	1.400,210	„	1.400,210
Zacatecas.....	4.046,000	20,663	4.066,663
	24.237,449	308,083	24.545,532
Copper coined in Mexico.....			218,870
Total coinage.....			$ 24.764,402

The exportation of precious metals during the same year, excluding that already coined, was as follows:

Silver ores.....	8.874,457	
Gold bullion.....	612,619	
Silver „	6.751,219	
Mixed silver.....	729,134	
Sulphides of silver.....	1.280,769	
Slag	1,382	18.249,580
Added to the coinage this gives a total of.....		$ 43.013.982

This table shows almost exactly the value of the mineral products of the country for the year.

The extraction of gold is daily acquiring an increased importance, as can be seen from the reports which are periodically published by the Department of the Treasury. The entries of this metal in the mints during the ten years from July 1st., 1881 to June 30th., 1891, are shown in the following table:

Financial year	1881–1882.....	382,752
„	1882–1883.....	330,419
„	1883–1884.....	261,856
„	1884–1885.....	653,839
„	1885–1886.....	556,921

„	1886–1887	548,414
„	1887–1888	738,598
„	1888–1889	874,223
„	1889–1890	979,059
„	1890–1891	1.089,702

The Government of the Nation, has not omitted any means or sacrifice in order to push forward the construction of railroads, which now extend throughout the territory of the Republic, facilitating communications and imparting new life to the mercantile, agricultural and mineral industries of the country.

In the year 1880, there were fifteen lines in operation whilst at the end of the year 1892, we have 89 lines in full operation; only taking into consideration the lines established by Federal concession, we find that the first measured 1,055 kilometres and the second 10,558.

The following table shows the class of lines and their total length.

R. R. Federal concessions	10557.936 kils.
Town tramways	354.100 „
Accomodation tramways	185.296 „
Private tramways	71.000 „
Decauville Railroads	230.252 „
Total	11398.634 kils.

The returns of passengers and freight, as well as the products of the Railroads during the year 1890, when compared with those of 1880, show a notable difference in favor of the former year, as can be seen from the following table.

	Passengers.	Freight.	Income.
1880.....	9.699,982	364.398,058 tons.	$ 6.317,901
1890.....	19.531,695	2,734.430,645 „	21.019,916
Increase.....	9.831,713	2,370.032.587 tons.	$ 14.702,053

The same progress has taken place with respect to the telegraphic lines, as the sixteen thousand nine hundred and ten kilometres that existed in 1880, had increased in 1890 to 57,657, showing a difference of 40,747 kilometres.

If the developement of the telegraph lines, which is specially due to the direct action of the Government, is remarkable, the development of telephone lines is no less worthy of note, as the present net work of these wires measures 8,263 kilometres. The messages on the Federal lines during the year 1890, reached the number of 3.486,779 as follows:

	Messages.	Words.
Public.....	2.427,477	28.805,973
With rebate.....	42,376	1.028,235
Official.....	1.016,926	32.338,884
Increase.....	3.486,779	62.173,092

The messages transmitted in 1880, were 281,697, showing a difference of 3.205,082 in favor of the year 1890.

Income in 1880.....	$ 126,962
„ 1890.....	4.688,000
Increase.....	$ 4.561,038

The reforms introduced into the postal regulations, and the reorganization of the Post Offices of the country, have greatly improved the service of this Department, as is shown in the following table which corresponds to the year 1892.

PIECES RECEIVED.

Interior service	55.879,845
Exterior service	13.006,615
	68.886,468
In 1880	7.054,790
Increase	61.829,670
Income in 1880	$ 605,652
„ 1890	1.142,181
Increase	$ 536,529

Such are in brief the details of the different branches treated of in the present work, and which with their eloquent figures and irrefutable deductions, clearly show the progress and advancement which have taken place in this country.

Mexico, 26th. of March, 1893.

ANTONIO GARCIA CUBAS.

I

INSTITUTIONS.

In accordance with the Constitutional Law which recognizes the fundamental principles of the rights of man, the Government of the Republic, is representative democratic and federal.

By virtue of this same law which was passed on the 5th of February 1857, the Republic is composed of States which are free and sovereign in everything relating to their internal administration; but are united in a single Federation which is established according to constitutional precepts.

The National Sovereignty is essentially and originally vested in the people, which grants all public power and exercises its sovereignty through the officers of Union in matters within their jurisdiction, and through the State officers in those which relate to their own internal administration; all under conditions which have been carefully established in the Federal Constitution and in the special Constitutions of each State, which in no case are allowed to contravene the stipulations of the Federal agreement.

According to the Constitution, all persons in the Republic are born free, and slaves recover their liberty the moment they step on the National territory. The same Constitution guarantees freedom of education, and in the exercise of professions,

freedom of thought and of the Press; the only restrictions being those which are prescribed by morality, the respect due to private life, the rights of third parties and public tranquility; it prescribes that no one shall be obliged to give personal service without just retribution and his full consent, it also asserts the rights of petition and association, when with a legitimate object, that of carrying arms for private security and lawful defense; that of entering and leaving the Republic, traveling throughout its territory and changing residence without the necessity of passports; it ignores titles of nobillity, hereditary prerogatives and honors, as well as judgment by private laws or special tribunals; it prohibits the issue of laws with a retroactive effect and the celebration of treaties for the extradition of political criminals; the intrusion into a domicile without written order from a competent authority, and imprisonment for debt of an entirely civil character; it prescribes that imprisonment shall only be allowed when the alleged crime merits personal punishment, and that no detention will exceed the term of three days without due cause being shown for an order of imprisonment; it establishes the guarantees that every accused person shall have in a criminal prosecution, and the exclusive jurisdiction of the judicial authorities in the application of the penalties, that not being of a merely correctional character, can be imposed by the executive authorities; it prohibites all penalties that mutilate, defame, or brand, the lash and torture of whatever class; it declares the abolition of the death penalty for political causes, restraining it to a few cases and determining that it can only be applied to those guilty of high treason, brigandage, incendiarism, parricide and murder in the first degree; it orders that no criminal prosecution shall be carried through more than three courts and that no one shall be judged twice under the same accusation; it proclaims the inviolability of correspondence and the respect due to property, save in the cases of expropriation under special law for the public service, and after due compensation; it prohibits the

billeting of troops in time of peace, and in time of war as well, except under the conditions established by law, and also provides that neither civil nor eclesiastical corporations shall be allowed to acquire, or administer real estate; it prohibits all kinds of monopolies, privileges, and all restrictions even with a view to the protection of industry, always excepting the official monopoly of the coinage and postal service, as well as patents in favor of private persons for useful inventions or improvements; and finally it concedes to the President of the Republic, acting under the advice of the Cabinet, and with the approbations of Congress, or during the recess, of the Permanent Comittee, the authority to suspend constitutional guarantees in cases of invasion, grave public disorder, or any other cause which may threaten the general safety of society.

All children born of Mexican parents, whether within or without the territory of the Republic, the foreigners who may be naturalized in conformity with the laws of the Confederation, and those who acquire real estate in the Republic, or have Mexican children, always provided that they do not declare their determination to preserve their nationality, are Mexicans according to the provisions of the Constitution, and are under the obligation of lending their services in the defense of the country and of contributing to the public expenses. Other things being equal, they will be preferred to foreigners for all official employments or commissions, but everybody in general, whether native or foreign, has an equal right to the guarantees granted under the Constitution.

The additions to the latter, which were decreed on the 25th of September, 1873, established independence between the Church and State, depriving Congress of the authority to dictate laws which may establish or prohibit any form of religion; they declare marriage to be a civil contract; substitute a promise to tell the truth for a religious oath, and prohibit the establishment of monastic orders, whatever may be their denomination, or their object.

For purposes of administration, the Supreme Authorities of the Federation are divided into Legislative, Executive and Judicial, each of these being independent of the others in its own sphere of action, but the three forming one sole body which constitutes the Supreme Governent of the Nation.

LEGISLATIVE POWER.

This is formed by Congress, which is divided into two chambers having general authority, but having also each one its exclusive and special attributes. The Chamber of Deputies, or Representatives of the Nation, is formed of individuals who are elected every two years by Mexican citizens, in the proportion of one Deputy for every forty thousand inhabitants, or for any fraction over twenty thousand; and the Senate Chamber is composed of two members from each State, and two from the Federal District, elected indirectly in the first place, half the Chamber being renewable every two years. This Congress holds two ordinary sessions every year; the first, which may be extended for not more than thirty working days, commences on the 16th of September, and terminates on the 15th of December; and the second, which may be extended for 15 working days, begins on the 1st of April and terminates on the last of May. The last mentioned session is especially dedicated to the examination and discussion of the estimates for the following financial year, to the granting of supplies to cover these estimates, and to the inspection of the accounts of the previous year which are presented by the Executive.

Attributions of Congress in general.—The admission of new States and Territories into the Mexican Confederation; the elevation of these to the rank of Federal bodies when they have sufficient resources to provide for their political existence; the formation of new States within the limits of those which are already existing; the final settlement of the boundaries of these States; the change of residence of the Supreme Powers of the

Federation; the internal administration of the Federal District and Territories; the approbation of National Loans issued in accordance with instrucctions given by Congress itself; the issue of Customs Tariffs; the creation and suppression of Federal ofices and the assignation of salaries to the same; the declaration of war in view of the reports presented by the Executive; the Regulation of Letters of Marque; the creation, organization and discipline of the National Army and Navy; the issue of laws on naturalization, colonization and citizenship, on common roads and means of communication, and postal department; the establishment of mints, the regulations for the occupation and sale of waste lands, the concession of amnesties and the issue of the laws that may be required to carry out the determinations arrived at in the use of its attributes.

The exclusive prerogatives of the Chamber of Deputies are as follows:—to constitute itself into an Eelectoral College for the appointment of a President of the Republic, Judges of the Supreme Court and Senators for the Federal District; to accept or refuse the resignation of the President of the Republic and Judges of the Supreme Court, and to grant leave of absence to the former when he may solicit it; to appoint the superior and subaltern employes of the auditing department, exercising a strict vigilance on the fulfillment of the duties of this office; to examine the annual accounts of the Federal Treasury and pass the estimate of expenses, levying the taxes which may be necessary to cover the same; to constitute itself into a Grand Jury which will investigate the following accusations:—firstly, against Deputies or Senators, Judges of the Supreme Court and Secretaries of State for ordinary crimes which may have been committed during their tenure of office, as well as for any faults or omissions which they may have committed in the exercise of the same; and secondly, for any infraction of the Constitution, or of the Federal Laws, which may have been committed by the Governor of a State, or by the President of the Republic. No accusation can be presented against the

latter during the term of his office, unless it is for high treason, express violation of the Constitution, attacks on freedom of election, or grave crimes of the ordinary class.

The special prerogatives of the Senate are: the approbation of diplomatic treaties and conventions; the ratification of appointments made by the President of ministers, diplomatic agents, consuls general, superior employés of the Treasury, Colonels and other superior officers of the Army; the authorization of the departure of National troops from the National territory and the passage of foreign troops through the same; the duration of a foreign squadron for more than one month in the waters of the Republic; the granting permission to the Executive for the issue of troops of the National Guard outside of their respective States; the declaration of the cases in which, the authorities of any State having disappeared, the Executive, with the approbation of the Senate, will be authorized to appoint a Provisional Governor who will call on the people to elect a permanent one (who can not be himself); deciding the disputes which may arise between the different functionaries of a State; and lastly, constituting itself into a Grand Jury which shall pass sentence on official crimes, those of the common order being passed to the ordinary courts after investigation by the accusing Chamber.

THE EXECUTIVE POWER.

The Executive Power is vested in a single individual, who is named "President of United States of Mexico," and is elected by popular vote for a period of four years, which commences on the last of December. In the fulfillment of his important duties, the President has the assistance of seven Secretaries of State, having full liberty to appoint and remove them as he sees fit. These Secretaries are in charge of the following Departments: first, Foreign Affairs; second, Interior; third, Justice and Public Education; fourth, Fomento, (Developement); fifth, Comunications and Public Works; sixth, the

Treasury and Public Credit, and seventh, War and Marine. These Secretaries authorize with their signatures, each in his own departament, the regulations, orders and decrees issued by the President, without which autorization these have no legal force.

The duties and prerogatives of the President of the Republic are as follows:—To promulgate and carry out the laws, watching the exact observance of the same; appointing and removing as he sees fit the Secretaries of State and Federal employés; appointing with the approbation of the Senate, Ministers, Diplomatic Agents, Consuls, Colonels and other superior officers of the National Army and Navy, as well as the superior officers of the Treasury; appointing in accordance with the laws all the other officers of the National Army and Navy, disposing of the permanent forces by land and sea, as well as of the National Guard, for the internal security of the country and defence from invasion; declaring war when duly authorized to do so by Congress; granting Letters of Marque; directing diplomatic negotiations and celebrating treaties with foreign powers; receiving representatives and other envoys from the latter; convoking Congress to hold extraordinary sessions with the consent of the Permanent Commitee; giving the judicial authorities all the assistance that they may require in the exercise of their duties; opening ports to commerce and establishing Custom Houses in the same; granting pardon to criminals condemned by the Federal Tribunals; granting patents to the discoverers, inventors, or improvers in any branch of industry.

The duties of the Secretary of State for Foreign Affairs, include every thing that relates to International Relations, Consulates, location and preservation of the boundaries of the Republic, naturalization of foreigners, registration of foreign firms and companies, certification of signatures, the charge of National Great Seal, and of the general archives, besides official ceremonials and publications.

The duties of the Secretary of State for the Interior include, the management of general elections, Congress of the Union, constitucional reforms, the observance of the Constitution, the relations between the States, the territorial division and limits of the States, public order, the National Guard, amnesties, civil registry offices, the rights of citizenship, the freedom of assembly, freedom of the Press, freedom of worship and guarantees for the same, ordinary police and the health department; Post-Office, National festivities, epidemics, vaccination, Goverment of the Federal District in political and administrative matters, public charities, hospitals, asylums, orphanages, prisons, pententiaries, convict establishments, houses of correction, and Government printing.

The Secretary of State in the department of Justice and Public Instruction has under his charge: the Supreme Court, the Circuit and District Courts, the controversies that come before the Tribunals of the Federation, prosecutions for piracy, expropriations of property for reason of public utility, codes, official collections of laws and decrees, the judicial organization in the Federal District and Territories, freedom of instruction, professional diplomas, national colleges, technical schools, excepting those of engineering and agriculture; scientific, art and literary societes, libraries, museums, national antiquities, lawyers and notaries, pardons and commutations of sentence.

The duties of the Secretary of State in the Department of Fomento include; statistics, freedom of industry and work, agriculture, commerce, mining, patents on inventions, colonization, waste lands, expositions of agricultural, industrial, mineral and textile products, geographical and astronomical observations, scientific journeys and explorations, weights and measures and schools of engineering and agriculture.

The Secretary of State in the Department of Comunications and Public Works, has under his charge the following matters: wagon roads, railroads, bridges and canals, telegraphs, light-

houses, useful and ornamental public monuments, that may be erected either at the cost or under the protection of the Federal Treasury, and Government buildings.

The Secretary of State in the Department of the Treasury and Public Credit, takes under his charge the administration of all Federal revenues, the customs tariffs, the mints, the public debt and loans, and the nationalization of real estate in mort-main.

The Secretary of State in the Department of War and Marine, has in his charge: the standing army, the National Navy, the National Guard when in the service of the Federation, the Military College, the Naval School, the Military Hospitals, Military Colonies, Letters of Marque, fortresses, barracks, arsenals, deposits and warehouses belonging to the Federation, and wild Indians.

JUSTICIARY.

This is composed of the Supreme Court of Justice with the District and Circuit Tribunals; the first has eleven permanent judges, four supernumerary judges, one prosecuting magistrate and one attorney general.

These officers are all elected by popular vote and their term of office lasts for six years from the day on which they take the oath prescribed by the Constitution. They sit in three Courts for the transaction of ordinary business, but in suits for protection against official injustice and in all matters that are related with the Federal Authorities they sit in full Court.

According to the Constitution the President of the Supreme Court used to be *ex-oficio* Vice President of the Republic; but by an amendment law passed on the 3rd of October 1882, in cases of either temporary or permanent absence of the Executive, his place will be taken by the person who during the preceding month has filled the office of President or Vice President of the Senate, or when this is in recess, of the Permanent Committee.

The Supreme Court has jurisdiction over all controversies that may arise with respect to the fulfillment and application of the federal laws when these do not affect private interests, as well as in all questions affecting maritime rights; in questions arising between two or more states, in civil or criminal cases originting in treaties with foreign powers, in those relating to diplomatic and consular agents, and generally in all those in which the Federation is interested.

The Supreme Court extends its sphere of action over the entire Republic through the District and Circuit Judges. The first of these have jurisdiction, in first instance, in suits involving Federal interests, always excepting those which may arise between one State and another, and those in which the Union takes a part, the jurisdiction of these being vested in the Supreme Court or Circuit Tribunals, as Courts of first instance.

The Federal Tribunals determine all controversies that arise; firstly, through the action of laws, or of any person in authority violating personal guarantees; secondly, through laws, or acts of the Federal authority, which violate or restrict the Sovereignty of the States; and thirdly, through laws or acts of State Officers who usurp Federal authority.

The District Judges, who are representatives of theFederal Judiciary in the States and Districts have jurisdiction in first instances, in all suits for protection arising from violation of personal guarantees, and all others that are specified in the previous paragraph; the final sentence being given by the Supreme Court in full session and sitting as a Court of second instance.

There are eight Circuit Tribunals and thirty eight District Courts in the Republic, distributed as shown in the following table.

Return of Circuit Tribunals and District Courts in the Republic, showing their Residence and Territorial Jurisdiction.

RESIDENCE of Circuit Tribunals.	District Courts.	Residence of District Courts.	Jurisdiction of each Court.
Culiacan.....	Sonora.....	Guaymas.....	All the State of Sonora.
	Sinaloa.....	Mazatlan.....	,, ,, ;, ,, Sinaloa.
	1st. of Lower California.....	La Paz.....	Counties of the South and Center of Lower California.
	2nd. ,, ,, ...	Todos Santos.....	Northern County of Lower California.
Chihuahuu. ...	Durango.....	Durango.....	All the State of Durango.
	Chihuahua.....	Chihuahua.....	The State of Chihuahua, with the exception of the Counties of Bravo, Galeana and Ojinaga.
	Paso nel Norte.....	Paso del Norte.....	Counties of Bravo, Galeana and Ojinaga, of the State of Chihuahua.
Guadalajara...	Jalisco.....	Guadalajara.	All the State of Jalisco.
	Zacatecas.....	Zacatecas.....	,, ,, ,, ,, Zacatecas
	Colima.....	Colima.....	,, ,, ,, ,, Colima.
	Aguascalientes.....	Aguascalientes.....	,, ,, ,, ,, Aguascalientes.
	Tepic.....	Tepic.....	,, ,, Territory of Tepic, formed out of what was the 7th Canton of Jalisco.
Mérida.....	Chiapas.....	San Cristóbal las Casas	The State of Chiapas, excepting the Department of Soconusco.
	Tabasco.....	San Juan Bautista.....	All the State of Tabusco.
	Yucatan	Mérida.....	,, ,, ,, ,, Yucatan.
	Campeche.....	Campeche..	,, ,, ,, ,, Campeche.

RESIDENCE of Circuit Tribunals.	District Courts.	Residence of District Courts.	Jurisdiction of each Court.
México	1st. of the Federal District...	México	The Federal District. } The two Judges sit weekly by turns.
	2nd. ,, ,, ,, ...	México	,, ,, ,, }
	Guerrero	Chilpancingo	All the State of Guerrero.
	Morelos	Cuernavaca	,, ,, ,, ,, Morelos.
	Tlaxcala	Tlaxcala	,, ,, ,, ,, Tlaxcala.
	Hidalgo	Pachuca	,, ,, ,, ,, Hidalgo.
	State of Mexico	Toluca	,, ,, ,, ,, Mexico.
Monterrey	Coahuila	Saltillo	State of Coahuila, with the exception of the Districts of Monclova and Rio Grande.
	Piedras Negras	Piedras Negras	Districts of Monclova and Rio Grande of the State of Coahuila.
	Matamoros	Matamoros	North of Tamaulipas, with the exception of the Municipalities of Guerrero & Mier.
	Nuevo Laredo	Nuevo Laredo	Municipality of Guerrero and Mier of the North of Tamaulipas.
	Nuevo Leon	Monterrey	All the State of Nuevo Leon.
Orizaba	1st. of Veracruz	Veracruz	The State of Veracruz } The two Judges sit weekly by turns.
	2nd. ,, ...	Veracruz	,, ,, ,, ,, }
	Puebla	Puebla	All the State of Puebla.
	Oaxaca	Oaxaca	,, ,, ,, ,, Oaxaca.
	Tapachula	Tapachula	The Department of Soconusco of the State of Chiapas.
	Tampico	Tampico	South and Centre of the State of Tamaulipas.
Querétaro	Guanajuato	Guanajuato	All the State of Guanajuato.
	Michoacan	Morelia	,, ,, ,, ,, Michoacan.
	Querétaro	Querétaro	,, ,, ,, ,, Querétaro.
	San Luis Potosí	San Luis Potosí	,, ,, ,, ,, San Luis Potosí.

We thus see that the Nation exercises its Sovereignty through the Federal authorities, in those cases which come under their jurisdiction, and through those of the States in all matters which concern their interior administration.

In the same manner, the Chamber of Deputies, besides its more elevated Federal functions, exercises those of a Legislature for the Federal District; the Executive Power of which is vested in the President of the Republic, and by delegation from im, in the Governor. The ordinary justice is administered in the District, first; by Justices of the Peace, who are considered as agents of the judicial police and reside in the smaller villages where are there are no minor judges; secondly, by minor judges, wo outside of the Capital, have jurisdiction in civil suits, the penalty which does not exceed two months imprisonment, or a fine of $300., and within the Capital in civil suits involving up to $500 fine; thirdly, by correctional judges, having jurisdiction in cases involving two years imprisonment; fourthly, by six Civil Judges of first instance, and five criminal; fithly, by the jury which is composed of nine individuals presided over by the Judge who has investigated the case from the beginning; and, sixthly, by the Superior Tribunal which is composed of fourteen permanent magistrates and four super-numeraries, divided into four divisions of which the second tries criminal accusations, the third and fourth civil suits, and the first casations and disputed jurisdiction in both branches.

The administration of justice is assisted: firstly, by the Public Censor of the Courts; secondly by the official Defenders of the accused; and thirdly, by Medico-Legal Experts and the Medico Legal Council.

The Public Minister is a magistrate whose special function it is to defend the interests of society, and in its name demand the prompt and faithful administration of justice. This Magistrate is represented in the Superior Tribunal by the Procurator, who, in his turn, has ten agents under his inmediate

orders, and whose duties, like those of all other judicial functionaries, are clearly defined in the Code of Penal procedure.

In order to defend poor persons who may be criminally accused six official defenders are appointed by the Judge, or Tribunal in which they practice, and in the fulfillment of their duties they are subject to disciplinary corrections which the law allows to be imposed on the parties to a suit, or on their counsel.

Whenever the Public Minister, the Judges, or Tribunals of Common Law call one or more of the Medico-Legal Experts who are appointed by the Scretary of Justice for the Federal District, they are bound to respond to the call for the purpose of examining any person, making an analysis of any substance or fulfilling anyother commission that may be required of them, and they must present their reports in all matters as provided by the Code.

But in cases where a wounded person is either cured or dies in Hospital, these documents will be issued by the physicians belonging to the establishment.

The Medico Legal Council is composed of a President and two members, and to this the Judges apply whenever they find it necesary to appoint new experts, to revise the reports and opinions of the same, or of the Hospital physicians, to assist the latter in post-mortem examinations, diagnosis of injured persons, or necesary analysis; and lastly, to be present at the trials to whhic they may be cited.

Such is the Judicial organization of the Federal District.

In conformity with the private constitutions of the different States, which recognise the same fundamental principle as that of the Federation, each one of its governments is likewise divided into three powers: Legislative, Executive and Judicial, of which bear the respective names of Legislature, State Government, and Supreme Tribunal. The attributions which correspond to each of these Power are clearly specified in the

respective Constitution of each State, the provisions of which only relate to their own internal administration and in no way contravene the general provisions of the Federal Constitution which rules over the entire country.

II

POLITICAL DIVISION, EXTENT AND POPULATION OF THE REPUBLIC.

STATES.	AREA IN Square Kilomts.	Population.	Districts.	Counties.	Cantons.	Departments.	Municipal Districts.	Municipalities.	Agencies.	Sections.	CAPITALS.
NORTHERN STATES.											
1 Sonora	199,224	154,532	9	.....	...	...	.....	86	.....	...	Hermosillo.
2 Chihuahua	227,468	298,073	9	.....	...	...	.....	56	.....	55	Chihuahua.
3 Coahuila	164,690	177,797	5	.....	...	...	.....	31	.....	...	Saltillo.
4 Nuevo León	61,118	270,958	10	.....	...	...	.....	48	.....	...	Monterey.
	652,500	601,360	33	.....	...	...	.....	221	.....	55	
GULF STATES.											
5 Tamaulipas	83,234	188,497	4	.....	...	...	.....	39	.....	...	Ciudad Victoria.
6 Veracruz	75,651	633,369	.....	.....	18	...	.....	197	.....	...	Jalapa.
7 Tabasco	26,094	114,028	.....	14	...	...	.....	17	.....	...	San Juan Bautista.
8 Campeche	46,855	91,180	.....	5	...	...	.....	35	.....	...	Campeche.
9 Yucatán	91,201	275,506	.....	16	...	...	.....	84	.....	...	Mérida.
	323,035	1.302,580	4	35	18	...	.....	372	.....	...	

PACIFIC COAST.											
10 Sinaloa	87,231	223,684	10	.....	...	...	.....	10	.....	...	Culiacán.
11 Jalisco	82,503	1.159,341	.....	.....	11	34	.....	94	.....	...	Guadalajara.
12 Colima	5,887	69,547	.....	3	...	...	.....	7	.....	...	Colima.
13 Michoacán	59,261	834,923	15	.....	...	...	.....	77	.....	...	Morelia.
14 Guerrero	64,756	332,887	14	.....	...	...	.....	62	.....	...	Chilpancingo.
15 Oaxaca	91,664	793,419	26	.....	...	...	.....	463	671	...	Oaxaca.
16 Chiapas	70,524	299,941	.....	.....	...	11	.....	126	.....	...	San Cristóbal.
	461,826	3.713,742	65	3	11	45	.....	839	671	...	
CENTRAL STATES.											
17 Durango	98,470	265,931	...	13	...	...	.....	45	.....	...	Durango.
18 Zacatecas	64,138	526,966	...	12	...	...	.....	54	.....	...	Zacatecas.
19 Aguascalientes	7,644	121,926	...	4	...	...	.....	8	.....	...	Aguascalientes.
20 San Luis Potosí	65,586	546,447	...	13	...	...	.....	57	.....	...	San Luis.
21 Guanajuato	29,458	1.007,116	...	31	...	5	.....	45	.....	...	Guanajuato.
22 Querétaro	9,215	213,525	6	...	...	...	.....	18	.....	...	Querétaro.
23 Hidalgo	23,101	494,212	14	...	...	...	73	.....	.....	...	Pachuca.
24 México	23,957	778,969	15	...	...	...	39	85	.....	...	Toluca.
25 Morelos	7,184	151,540	6	...	...	...	.....	26	.....	...	Cuernavaca.
26 Puebla	31,616	839,468	21	...	...	...	.....	175	.....	...	Puebla.
27 Tlaxcala	4,132	147,988	6	...	...	...	.....	33	.....	...	Tlaxcala.
	364,501	5.094,088	68	73	...	5	112	546	.....	...	

STATES.	AREA IN Square Kilomts.	Population.	Districts.	Counties.	Cantons.	Departments.	Municipal Districts.	Municipalities.	Agencies.	Sections.	CAPITALS.
DISTRICT AND TERRITORIES.											
Federal District	1,200	463,646	4	...	...	...	...	21	...	...	México.
Ter. of Lower California	151,109	34,668	2	1	...	...	...	8	...	...	La Paz.
" " Tepic	29,211	125,294	...	6	...	...	...	16	...	...	Tepic.
	181,520	623,608	6	7	...	...	...	45	...	...	
	1.983,382	11.635,378	176	118	29	50	112	2,023	671	55	

AREA OF THE ISLANDS.

Guadalupe (Pacific Ocean)	208
Cedros » »	348
Santa Margarita » »	128
Creciente » »	52
Revillagigedo » »	41
Tres Marías » »	53
Tiburón (Gulf of California)	963
Angel de la Guarda » »	686
Montagué » »	42
San Esteban » »	38
San Lorenzo » »	22
San José » »	184
Cerralvo » »	152
Santa Catalina » »	88
Carried forward	2,900

Brought forward	2,900
Monserrate (Gulf of California)	25
Cármen » »	144
San Márcos » »	28
Partida » »	24
Cozumel (Carribean Sea)	406
Mujeres (Yucatan Channel)	4
Espíritu Santo (Gulf of California)	68
Other small islands	82
Total	3,681
Total area of States and Territories	1.983,382
" " Islands	3,681
Totals	1.987,063

ORDER OF STATES ACCORDING TO DENSITY OF POPULATION.

		Inhabitants per square kilo.
1	Federal District	386.3
2	Tlaxcala	35.8
3	Guanajuato	34.2
4	México	32.5
5	Puebla	26.5
6	Querétaro	23.
7	Hidalgo	21.4
8	Morelos	21.
9	Aguascalientes	15.9
10	Michoacán	14.
11	Jalisco	14.
12	Colima	12.
13	Oaxaca	8.6
14	San Luis Potosí	8.3
15	Veracruz	8.3
16	Zacatecas	8.2
17	Guerrero	5.1
18	Tabasco	4.4
19	Nuevo Leon	4.4
20	Tepic	4.3
21	Chiapas	4.2
22	Yucatan	3.
23	Durango	2.7
24	Sinaloa	2.6
25	Tamaulipas	2.2
26	Campeche	2.
26	Chihuahua	1.3
28	Coahuila	1.
29	Sonora	0.77
30	Lower California	0.23

PRINCIPAL TOWNS AND CITIES.

Cities with more than 100,000 inhabitants.

México	City	Capital of country and Federal District	350,000
Guadalajara	,,	Capital of State of Jalisco	105,000

Cities with 50,000 or more inhabitants.

Puebla	,,	Capital of State of Puebla	90,000
Guanajuato and mines	,,	,, ,, ,, ,, Guanajuato.	75,000
San Luis Potosí	,,	,, ,, ,, ,, San Luis Potosí	62,600
León	,,	County Seat, Guanajuato	50,000

Cities of 20,000 or more inhabitants.

Monterey	City	Capital of the State of Nuevo León	42,000
Mérida	,,	Capital of State of Yucatán	40,000
Aguascalientes	,,	,, ,, ,, ,, Aguascalientes	32,000
Oaxáca	,,	Capital of State of Oaxaca	29,000
Colima	,,	,, ,, ,, ,, ,, Colima	26,300
Saltillo	,,	,, ,, ,, ,, ,, Coahuila	26,000
Pachuca (mines)	,,	,, ,, ,, ,, ,, Hidalgo.	25,000
Durango	,,	,, ,, ,, ,, ,, Durango	25,000
Chihuahua	,,	,, ,, ,, ,, ,, Chihuahua	25,000
Celaya	,,	County Seat, Guanajuato	25,000
Querétaro	,,	Capital of the State of Querétaro	25,000
Veracruz (Port)	,,	Capital of Canton of Veracruz.	24,000
Morelia	,,	,, ,, State of Michoacán	24,000
Ciudad Guzmán	,,	,, ,, Canton Jalisco	24,000
Allende	,,	County Seat, Guanajuato	22,000
Orizaba	,,	Capital of Canton. Veracruz	20,000

Towns of 10,000 or more inhabitants.

Campeche (Port).....	City.....	Capital of State of Campeche...	19,000
Tinum.....	Village	Municip. of Hecelchacán Campeche.....	19,000
Mazatlán (Port).....	City.....	County Seat Sinaloa.....	16,000
Silao.....	,, ...	,, ,, Guanajuato.....	16,000
Venado.....	,, ...	,, ,, San Luis.....	16,000
Irapuato.....	Town...	,, ,, Guanajuato.....	15,000
San Bartolomé.....	City.....	Capital of Department of la Libertad (Chiapas).....	15,000
Salvatierra.....	,, ...	County Seat Guanajuato.....	14,000
Lagos.....	,, ...	,, ,, Jalisco.....	14,000
Ciudad García.....	,, ...	,, ,, Zacatecas.....	14,000
Fresnillo (mines).....	,, ...	,, ,, Zacatecas.....	13,000
Tepic.....	,, ...	Capital of Territory of Tepic....	13,000
Jalapa.....	,, ...	Capital of State of Veracruz.....	13,000
Toluca.....	,, ...	,, ,, ,, ,, México.....	12,000
Tacubaya.....	,, ...	County Seat Federal District...	12,000
San Cristobal.....	,, ...	Capital of State of Chiapas.....	12,000
Uruapan.....	,, ...	County Seat Michoacán.....	12,000
Matamoros de Izucar....	,, ...	,, ,, Puebla.....	12,000
Ameca.....	,, ...	,, ,, Jalisco.....	12,000
Autlan.....	,, ...	,, ,, Jalisco.....	12,000
Zamora.....	,, ...	,, ,, Michoacán.....	11,000
La Piedad.....	,, ...	,, ,, Michoacán.....	11,000
Sayula.....	,, ...	,, ,, Jalisco.....	11,000
Teocuitatlán.....	Village	Municipality of Sayula. Jalisco.	11,000
Angangueo (mines).....	,, ...	,, ,, Zitácuaro Michoacán.....	10,000
Salamanca.....	Town...	County Seat Guanajuato.....	10,000
Monclova.....	City.....	,, ,, Coahuila.....	10,000
Cocula.....	,, ...	Municipality of Ameca. Jalisco.	10,000
Chalchicomula.....	,, ...	County Seat Puebla.....	10,000
Sahuayo.....	Village	Municipality of Jiquilpan Michoacán.....	10,000
San Juan del Rio.....	City.....	County Seat Querétaro.....	10,000
Matamoros (Port).....	,, ...	,, ,, Tamaulipas.....	10,000
Tlacotalpan.....	,, ...	Municipality Veracruz.....	10,000

Towns of 5,000 or more inhabitants.

Culiacán.....	City.....	Capital of State of Sinaloa.....	9,000
Etzatlán.....	Town...	Municipality of Tequila. Jalisco	9,000

Tuxtla Gutiérrez.....	City.....	Capital of Departamento Chiapas.....	9,000
Mocorito.....	Town...	County Seat Sinaloa.....	9,000
Juchitlán.....	,, ...	,, ,, Oaxaca.....	9,000
Chalchihuites.....	,, ...	Municipality of Sombrerete. Zacatecas.....	9,000
Hermosillo.....	City.....	Capital of State of Sonora.....	9,000
Tenancingo.....	,, ...	County Seat México.....	8,700
Cotija.....	Town...	Municipality Jiquilpan Michoacán.....	8,500
San Juan Bautista.....	City.....	Capital of State of Tabasco.....	8,300
La Barca.....	,, ...	County Seat Jalisco.....	8,300
Linares.....	,, ...	Municipality Nuevo León.....	8,300
Matehuala.....	,, ...	,, Catorce. San Luis.	8,300
Amecameca.....	,, ...	,, Chalco. México....	8,200
Cuernavaca.....	,, ...	Capital of State of Morelos.....	8,200
Atlixco.....	,, ...	County Seat Puebla.....	8,000
Ures.....	,, ...	,, ,, Sonora.....	8,000
Tulancingo.....	,, ...	,, ,, Hidalgo.....	8,000
Cusihuiriachic.....	Town...	,, ,, Chihuahua.....	8,000
Hidalgo del Parral.....	City.....	,, ,, Chihuahua.....	8,000
Rosario.....	Town...	,, ,, Sinaloa.....	8,000
Hunucomá.....	,, ...	,, ,, Yucatán.....	8,000
Santa María del Río.....	City.....	,, ,, San Luis Potosí...	8,000
Valle de Santiago.....	,, ...	,, ,, Guanajuato.....	7,800
Tuxpan.....	Town...	Municipality C. Guzmán. Jalisco.....	7,700
San Andrés Tuxtla.....	,, ...	County Seat Veracruz.....	7,600
Pénjamo.....	,, ...	,, ,, Guanajuato.....	7,600
Pátzcuaro.....	City.....	,, ,, Michoacán.....	7,500
Teocaltiche.....	,, ...	,, ,, Jalisco.....	7,500
Teziutlán.....	,, ...	,, ,, Puebla.....	7,500
San Gabriel.....	Town...	Municipality Guzmán. Jalisco	7,500
Tlaxiaco.....	City.....	County Seat Oaxaca.....	7,400
Ahualulco.....	Town...	Municipality Tequila. Jalisco...	7,400
Encarnación.....	City.....	,, Teocaltiche Jalisco	7,400
Villanueva.....	,, ...	County Seat Zacatecas.....	7,400
Huamantla.....	,, ...	,, ,, Tlaxcala.....	7,400
Dolores Hidalgo.....	,, ...	,, ,, Guanajuato.....	7,200
Puruándiro.....	,, ...	,, ,, Michoacán.....	7,200
Paso del Norte.....	,, ...	,, ,, Chihuahua.....	7,000
San Juan de Guadalupe.	,, ...	,, ,, Durango.....	7,000
Sombrerete.....	,, ...	,, ,, Zacatecas.....	7,000

Catorce Mineral	City	County Seat San Luis Potosí	7,000
San Francisco del Rincón	Town	,, ,, Guanajuato	7,000
Tenejapa	Village	Municipality Chiapas	7,000
Iguala	City	County Seat Guerrero	7,000
Arandas	Town	Municipality Jalisco	6,800
Santa Cruz	,,	County Seat Guanajuato	6,800
Comitán	City	,, ,,	6,800
Tampico	,,	,, ,, Tamaulipas	6,800
Tlaxcala	,,	Capital of State of Tlaxcala	6,700
San Felipe	,,	County Seat Guanajuato	6,700
Valparaíso	Town	Municipality Zacatecas	6,600
Tehuantepec	City	County Seat Oaxaca	9,600
Lagunillas	Town	Municipality San Luis Potosí	6,500
Cherán	Village	,, Michoacán	6,500
Ojuelos	,,	,, Jalisco	6,500
Chilpancingo	City	Capital of State of Guerrero	6,500
Parras	,,	County Seat Coahuila	6,500
Moroleón	Village	,, ,, Guanajuato	6,500
Chupaderos	,,	Municipality Zacatecas	6,400
Ciudad Victoria	City	Capital of State of Tamaulipas	6,300
Atotonilco el Alto	,,	Manicipality Jalisco	6,200
Matamoros de la Laguna	Town	,, Coahuila	6,200
Yuririapúndaro	,,	County Seat Guanajuato	6,200
Rayón	City	Municipality San Luis	6,150
La Paz (Port)	,,	Capital of Lower California	6,100
Villa Lerdo	Town	Municipality Durango	6,000
Ticul	City	County Seat Yucatán	6,000
Tixtla de Guerrero	,,	,, ,, Guerrero	6,000
Morelos	Town	Municipality Puebla	6,000
Acámbaro	,,	County Seat Guanajuato	6,000
Purépero	,,	Municipality Michoacán	5,900
Alamos	City	County Seat Sonora	5,800
Veta Grande	Village	Municipality Zacatecas	5,800
Rincón de Romos	City	County Seat Aguascalientes	5,800
Guadalcázar	,,	,, ,, San Luis Potosí	5,000
Sierra Mojada	Town	Municipality Coahuila	5,600
Río Grande	,,	,, Zacatecas	5,500
Jalostotitlán	,,	,, Jalisco	5,500
Comonfort	,,	County Seat Jalisco	5,400
Coatepec	City	,, ,, Veracruz	5,300
Yautepec	,,	,, ,, Morelos	5,300
Villa Alvarez	Town	,, ,, Oaxaca	5,300
Tehuacán	City	,, ,, Puebla	5,200

Jiquilpan	Town...	County Seat Michoacán	5,200
Iturbide	,, ...	,, ,, Guanajuato	5,200
Tepatitlán	,, ...	Municipality Jalisco	5,200
Guaymas (Port)	City.....	County Seat Sonora	5,200
Zumpango	,, ...	County Seat México	5,100
Jesús María	Village	Municipality Aguascalientes	5,100
Zapotiltic	,, ...	,, Jalisco	5,100
Tanhuato	,, ...	,, Michoacán	5,000
Tapachula	City.....	County Seat Chiapas	5,000
Tecolotlán	Village	Municipality Jalisco	5,000
Valladolid	City.....	County Seat Yucatán	5,000
Pinos	,, ...	,, ,, Zacatecas	5,000
Zapotitlán	Village	Municipality Jalisco	5,000
Teocelo	,, ...	,, Veracruz	5,000
Córdoba	City.....	County Seat Veracruz	5,000
Tenango	Town...	,, ,, México	5,000

The proportion of sexes in the general population of the Republic is as follows:

48 per cent of males, or say, 3.584,981.
52 per cent of females, or say, 6.050,397.

The data which we possess in the offices of the Civil Registry are not sufficient for the exact investigation of the influences which the climate exerts on the increase of population in the different localities of Mexican territory. Nevertheless, judging by information from trustworthy sources which refers to specific points, it can be asserted that the increase of population is larger under the influence of the cold climates, reaching the proportion of 5.5 per cent whilst in the hot climates it only reaches 3.11 per cent. tIt is also found that the cold climates are more favorable to the increase of males and the hot climates to the increase of females; in the former the increase being represented by the proportion of 5.57 per cent in males and 5.40 per cent in females, and in the latter by a proportion of 3.62 per cent in females and 2.60 p$ in males.

With the attention that is now given to this important department of statistics, we will soon have new data which

will allow us to extend these observations over the whole of the National territory, enabling us to fix general rules and arrive at the causes that determine the exact influence of climate in the various zones of the country on the life of its inhabitants.

The increase of population from the commencement of our glorious Independence has been very slow. At the commencement of the present century, the illustrious Baron Humboldt estimated our annual increase at 2.7 per cent a proportion which was afterwards rectified by Don Fernando Navarro y Noriega to 1.5 per cent and which later on, was reduced to 0.88 per cent, the natural increase of population being principally disturbed by the wars of Independence, epidemies, civil discord and foreign invasion. During the last ten years, which is the period selected for comparison, the peace which we enjoy has exerted a powerful influence on the improvement of the general conditions of society, and particularly, on the increase of population, so that we can estimate the present annual increase at 1.7 per cent.

The population of Mexico comprehends three groups, or leading races; firstly, European and Spanish-American; secondly, native; and thirdly, mixed.

In other words we have,

19 per cent of the first, or say, 2.210,722 inhabitants
38 per cent of the second, or say, 4.421,444 „
43 per cent of the third, or say, 5.003,212 „

The differences of language, customs and dress determine in this Republic the heterogeneity of the three races above mentioned.

The individuals of the first group and a small part of the third which has become assimilated, constitute the majority of the inhabitants of the country, whose civilization is similar to the European. Their national language is the Castillian, but they are taught French, English, German and Italian, though

the two first are the most extensively studied. Classical works, both in literature and art, Latin and the Greek roots as well as the great principles of science in all its branches, form the basis of public education as will be shown further on. Speaking in general terms, this class of society furnishes the members of the liberal professions and the vital element of the Capital and consequently the staunchest support to agriculture, mining, industry and comerce.

The mixed race resides as a general rule, like the first, in the great centers of population, where it occupies itself in the mechanical arts and other kinds of manual labor, being also scattered throughout the whole country and employing itself in the work of agriculture, mining and manufactures.

It will be inferred from the above that this race constitutes the laboring class of Mexican society. Its language is Spanish mixed with provincialisms, and with some new expressions which evidently proceed from the native languages. The prevailing religion is the Roman Catholic, but it is to be remarked that the Protestant sects find their proselytes in this class of the population.

Lively, intelligent and with a special talent for imitation, this race is remarkable for the good workmanship of its manufactures: in the printing and book-binding, in the carpenter's and cabinet maker's, in the blacksmith's and turner's workshops, in the carving of stone or wood, in the manufacture of hats and shoes, in the weaving of linen, wool and silk, and finally, in all the mechanical arts, the artisans of this country show their industry and intelligence. The rudimentary principles of social organization ar not unknown to them, and by attending to the improvement of their class and the progress of their education they have notably developed their ideas of associations which are not formed for the purpose of social dismemberment, but rather to promote fraternity and mutual aid. Not only in the large towns, but in those of the second and third order do we find well-regulated societies,

which, congregating the artisans in appropriate buildings sometimes listen to lectures and promote discussions on instructive subjects, and at others bring their families together in social reunions. Almost all these societies possess libraries and have established free schools for their children.

With respect to the native races it is to be noted that although the individuals who constitute them preserve their own habits, so directly opposed to those of other races, the degeneration of those who live in the villages near the great cities establishes a very great difference between them and the much larger number who dwell in the great mountain valleys, and have preserved the purity of their ancient customs and language, for which reason the race must not be judged entirely in the former class. Whilst the former are lazy and filthy in their habits, they form a great contrast with the latter, who are mostly dedicated to the labor of the field and to different manufactures, preserving their old traditions and the pureness of their language.

Of the different traits which characterize the Indian race, some are alike, whilst others show a remarkable difference.

Amongst those which are most general we find distrust, dissimulation, astuteness and pertinacity, but these differ greatly according to the circumstances affecting their condition, docility and civilization.

In some tribes such as those of the Comanches and Apaches, who issuing from the American reservations invade our territory, the savage qualities are found in full play; perfidy, treachery and cruelty in a special manner characterize them, and it is they who leaving their wigwams, come to infest our frontier States, spreading destruction and pillage over the country and greatly impeding its developement. The other Indians who are more or less civilized, dwell amongst the other races and dedicate themselves to agriculture, cotton-weaving, and in the States of Vera Cruz and Oaxaca, the women are particulary expert in basket-work, the manufacture of pottery, hats,

butter, cheese and many other articles which they sell in the larger towns, or in their weekly markets which they call *tianguis*, to which they flock in great numbers in their picturesque and often elegant dress, presenting a great contrast for its cleanliness with those of the Indians of the central table land, who are in general very much degenerated.

The Indians exercise religious forms which were imposed on them at the Conquest, but always with a propensity to idolatry, and in many places observing their ancient ceremonies which have to a great extent been adopted in their new form of worship. The pantomimic dances are the commonest and most characteristic form of expression of their rejoicing; in Frontera they are thoroughly savage dances; in the depths of the Sierras they have the imitative dances of the Cegador, the Tehuananzi, or of the Zempoalxochitl; in Vera Cruz, in Oaxaca and in distant Tabasco they have pantomimic dances, and in certain religious solemnities they have dances which are executed in the churches before the most venerated images, such as that of Guadalupe.

As a general thing the Indian is addicted to the use of strong liquor, but he is brave, determined and patient, qualities whose possession he often proves in hunting on the ranges of his native mountains, or as a soldier entering into battle after a painful march of twenty or more leagues; he is naturally strong and only thus can we comprehend how so many individuals in this race reach such an advanced age, in spite of bad food, unhealthy customs and houses which are small and damp, besides being greatly overcrowded.

There are individuals, and these not few in the race of which we are treating, who by their superior talents and education have assimilated themselves to the white race, coming to the front in the professions which they have adopted and especially in the Law and the Priesthood, showing that like other races they are capable of a high grade of civilization.

The Indian race is distributed throughout the whole terri-

tory of the Republic, and according to the classification of their languages made by the eminent philologist Don Francisco Pimentel, they form the following ethnographic families.

MEXICAN FAMILY,

This includes *Mexicans* and *Cuitlatecos*, and is extended over the States of Sinaloa, Jalisco, south of San Luis Potosí, Colima, Coasts of Michoacán, Guerrero, Morelos, México, Puebla, Federal District, Hidalgo, Tlaxcala Vera Cruz, and in smaller numbers throughout Aguascalientes, Tabasco, Oaxaca and Chiapas.....	1.942,500

OPATA- FAMILY OF SONORA.

Includes the *Opatas-Pimas*, *Papagos Yumas*, *Yaquis*, *Mayos*, *Tarahumares*, *Coras*, *Huicholes*, *Tepehuanes* and *Acaxees*, and extends over the States of Sonora, Chihuahua, Durango, Sinaloa, Jalisco, and Zacatecas.....	94,350

GUAICURA AND COCHIMI LAIMON FAMILY.

This family formerly consisted of more than 20,000 persons inhabiting the peninsula of Lower California. It now inhabits the Southern region and has been reduced to.....	2,800

SERI FAMILY.

Inhabits the Tiburon Island, and adjacent coasts of the State of Sonora. Happily its number has decreased in a remarkable manner, being now more or less.....	200

TARASCA FAMILY.

A powerful tribe and ancient rival of the Mexican, founded the kingdom of Michoacán, and inhabits the State of that name, besides of a few towns in the States of Ja-	
Carried forward.....	2.039,850

Brought forward.....	2,039,850
lisco and Guerrero. Its incorporation into the mixed race has diminished its numbers which, nevertheless comes to about.....	277,500

ZOQUE-MIXE FAMILY.

Includes the *Zoque-Mixes* and *Tapijulapas*, living in the States of Chiapas and Tabasco but principally in Oaxaca	6,600

TOTONACA FAMILY.

Inhabits the mountains of Huauchinango in the State of Puebla and part of the State of Vera Cruz being limited on the North by the Huastecos between the rivers Chahalacas and Cazones.....	100,000

MIXTECO-ZAPOTECA FAMILY.

A most interesting race inhabiting the State of Oaxaca and parts of Puebla and Guerrero. It includes *Mixtecos*, *Zapotecos*, *Chuchones*, *Popolocos*, *Cuicatecos*, *Soltecos*, *Chatinos*, *Papabucos*, *Amusgos or Musgos*, *Mazatecos and Chinantecos*.....	650,000

MATLALZINGA OR PIRINDA FAMILIES.

Founded the City of Toluca. They are found in small numbers scattered in the Valley of Toluca, in the Village of Charo in Michoacán, in those of San Martín and Santa Cruz of the District of Temascaltepec del Valle, in San Juan Atzinco de Ocuila, in San Mateo Mexicaltzinco, Calimaya and San Mateo de Temascaltepec.....	5,000

MAYA-QUICHE FAMILY.

Includes the *Mayas* or *Yucatecos*, the *Punctunc*, *Lacandones*, the *Petenes* or *Itzaes*, the *Chañabales*, *Comitecos* and *Jocolobales*, the *Choles*, *Quichés*, *Tzotziles*, *Tzendales*, *Mames* and *Huaxtecos*.....	450,000
Carried forward.....	3.528,950

Brought forward..... 3.528,950

CHONTAL FAMILY.

Principally dwells in the State of Tabasco and in smaller numbers, in the States of Guerrero and Oaxaca, spreading into Guatemala and Nicaragua..... 34,410

HUAVE FAMILY.

Originally from Nicaragua. It is found distributed in the District of Juchitlan, Tehuantepec and the centre of the State of Chiapas. 4,200

APACHE FAMILY.

Formed of savage tribes, such as the *Chiricahuas*, *Joatos*, *Mimbreños*, *Gileños Mescaleros*, *Sacramenteños*, *Carrizaleños*, *Xicarillas*, *Mogollones*, *Lipanes*, *Faraones* and *Navajoes*. All these tribes have their villages within the United States Territory from which they issue to make deprendations on that of Mexico; the number of them who may be considered as residents of the States of Chihuahua and Sonora come to about..... 9,000

OTHOMI FAMILY.

Includes the principal *Othomies*, spread through the States of Guanajuato, Querétaro, West of Hidalgo and Northwest of México, the *Serranos* in the Sierra Gorda of Guanajuato; the *Mazahuas*, in the Districts of Ixttahuaca and Villa del Valle, and in the mountains of Tajimaroa, Tlalpujahua, and Zitácuaro; the Pames, in the ancient Mission of Cerro Prieto of Jacalá, State of Hidalgo, in Santa María Acapulco of the State of Querétaro, in La Purísima de Arnedo and in Xichú, of the State of Guanajuato; but the greater part of them reside in the eastern district of the State of San Luis Potosí;

Carried forwar..... 3.576,560

Brought forward.....	3.576,560
and lastly, the *Jonases*, or *Mecos* who inhabit a small part of the mountains of Guanajuato.....	
The principal Othomies, in small numbers, and forming a distinct contrast to the rest of the inhabitants, are to be found in a particular quarter of the Capital of the Republic, as well as in the Village of Ixtenco in Tlaxcala and in the mountains which separate the valleys of Mexico and Toluca. The number of Othomies is estimated at.....	844,884
Total.....	4.421,444

Even in their very imperfect state, these statistics show that the Indian race has decreased in a very remarkable manner, whilst the mixed race has obtained its natural increase. As we have no reliable figures on which to base our calculations, it is impossible to arrive at the real proportions of this decrease.

All the authors who have treated of the history of Mexico at the time of the conquest, though they differ more or less from each other as to the population of the country at that time, are all unanimous in stating that the country was thickly populated, and we must certainly admit that their numbers were far superior at that time to what they were at the epoch of the Declaration of Independence. Since that date sufficient data have been collected and compared to confirm this fact that is perfectly explicable by natural laws. A proud race that will not alter its customs, and is of a pertinacious character, finding itself dominated by another and superior race could in no way make common cause with its original conquerors nor with their descendants; and as the distinguished historian, Orozco y Berra says, this race can not be compared to a grafted plant, but rather to a parasite that adheres to a tree. From these causes proceed the dissimulation and distrust with which the Indian treats the white, the indolence that naturally accompanies his discouragement and degeneration, and

the indifference with which he resigns himself to the changes of fortune.

The wars involved in the Conquest, the ancient system of *repartimientos*, which practically constituted slavary, the work in the mines, the epidemics and civil wars, the excessive work so different to their former life, and lastly, their incoporation into the mixed race, are the principal physical causes of the decadence of this interesting people.

For many years back, the disappearance of the Indian race has been observed. It is seen in the different States of the Republic, and appears to progress more in the North than in the South, so that of the frontier States Sonora is the only one that preserves even vestiges of its Indian population, and Chihuahua has a few members of the old tribe of Tarahumares dwelling in the fastnesses of the Sierra. By studying the population of the different States of the Republic, it is found that the Indian population is very much denser in the South of the Republic, and particulary in the State of Oaxaca, which having been so much longer isolated from the outer world, still preserves many of its ancient customs.

III

REVENUE AND EXPENSES OF THE FEDERAL Government.

According to the present law of estimates the different branches of Revenue are as follows:

1st. Import and Export Duties.

2nd. Internal Revenue.

3rd. Services, Incidental Revenue and Sundries.

The product of these three branches for the fiscal year ending the 30th of June, 1891, reached the sum of $38.324,604 49 a sum unprecedented in previous years, the mean revenue of the preceding ten fiscal years having only amounted to $28.000,000.

The details of the above sum, according to data in the National Treasury are as follows:

IMPORT AND EXPORT DUTIES.

Import duties	$20.178,744 17
Two per cent additional for harbor works	426,829 58
Consumption Duties	234,518 02
Tonnage, Pilotage, Storage and Lighthouse dues	104,289 84
Export duties on Orchilla Weed	114 68
Export Duties on National construction and cabinet woods, and transit on foreign woods	86,745 18
Transit Dues	
Carried forward	21.031,241 47

Brought forward.....	21.031,241 47
Navigation Licenses.....	928 00
Consular fees.....	153,030 34
	$21.185,199 81

INTERNAL REVENUE.

Stamp Tax.....	9.161,665 42
Taxes on Real Estate, Business and Professional licenses.....	1.306,743 37
Gate Duties.....	1.586,423 77
National Lottery.....	157,268 57
Legacy Tax for the National Library.....	259,521 04
Smelting, Assay and Coinage Dues.....	123,962 36
Federal Income Tax.....	470,469 86
	$34.251,254 20

SERVICES, INCIDENTAL REVENUE AND SUDRIES.

Post office Revenue.....	1.084,153 40
Federal Government Telegraph.....	462,076 59
Revenue from Stamp Printing Office.....	10,245 33
Revenue from Government Printing Office, Subscriptions and sales of the "Diario Oficial", "Diario de los Debates", "Semanario Judicial", and other subsidized Publications.....	8,174 53
Fines.....	11,303 02
Sundry Accounts Liquidated.....	5,430 21
Rents, Sales and other Products from Waste Lands.	538,493 23
Products of Nationalized Estates.....	40,608 78
Sales or Rent of National Property.....	318,051 32
Certification of Signatures.....	8,754 66
Net Products of the Schools of Agriculture, and of Arts.....	147,744 86
Donations to the Public Treasury.....	1,710 00
"Fiat" to Notaries.....	150 00
Diplomas to Law Agents.....	6,226 63
Sales, or Rents of Salt Works.....	22,063 63
Carried forward.....	36.916,440 39

Brought forward.....	36.916,440 39
Dues from Pearl, Whale, Otter, Seal and other Fisheries.....	2,884 56
Product of Capital, Vacant Property, Values and Rights belonging to the Federation.....	283,588 71
Old Credits, Taxes and other Federal Revenue not collected in previous years.....	1.121,690 83
Total Revenue.....	$38.324,604 49
Balance from Previous Year.....	8.003,905 97
Extraordinary Revenue proceeding from Balance of Loan of £10.500,000, first and second additional loans and other minor branches, including Current and Suplementary Accounts with National Bank of Mexico.....	18.770,524 60
Total Amount Received by Federal Treasury, to cover the Expenses authorized by the Law of Appropiation.....	65.099,035 06

APPROPIATIONS FOR THE FISCAL YEAR 1890 AND 1891.

1st	Department	Legislature.....	$ 978,561 52
2nd	„	Executive.....	43,929 69
3rd	„	Judiciary.....	458,719 20
4th	„	Foreign Affairs.....	518,533 02
5th	„	Interior.....	3.506,899 69
6th	„	Justice and Public Education.....	1.376,883 38
7th	„	Fomento.....	6.893,534 78
8th	„	Treasury and Public Credit.....	20.182,051 66
9th	„	Department, War and Marine.....	11.707,177 53
Consolidation and Conversion of debts to Railroad Companies, etc., etc.....			17.338,838 21
			$63.005,128 68

The payments out of this sum have been made made in the following manner:

In Cash.....	$56.928,276 11	
„ Credit Bonds.....	932,799 50	
„ Liquidations of Accounts.....	5.144,053 07	$63.005.128 68

According to the accounts of the Federal Treasury for 1890 and 1891.

Debt contracted in London and converted in accordance with the law of the 22nd of June 1885 and with an agreement celebrated with the Committee of Mexican Bond holders under date of June 23rd 1886.		$ 234,250 00	
Bonds of the Mexican Consolidated Foreign Debt of 1888.			
Principal.	$ 52.500,000 00		
Interest...	849,516 00	$ 53.349,516 00	
Bonds of the Mexican Consolidated Foreign Debt of 1890.			
Interest.....		475,435 50	
Provisional certificates of loan of 1890.....		30.000,000 00	$ 84.059,201 50
Liabilities of the Treasury proceding from estimates.			
Estimates up to June 30th 1882.			
Liquidated liabilities up to June 30th 1882 for conversion into bonds		.....	2.842,516 19
Bonds of the Consolidated Mexican Debt in accordance with the laws of June 14th 1885.			
Principal.....		29.950,750 00	
Interest.....		185,583 09	30.136,333 09
Carried froward.....			$ 117.038,050 78

Brought forward.....		$ 117.038,050 78
Estimates from 1st of July 1882 to 30th of June 1890.		
Certificates of balances and credit in liquidation, to be converted into certificates as above.		
For the entire period.....	9.733,761 11	
Estimates of 1890 and 1891.		
Total estimates for the 9 Departments.....	1.069,595 45	10.803,356 56
Total public debt.....		$ 127.841,407 34

BANKS.

The Banks established in the Republic are as follows:

1st, National Bank of México, autorized by Decree of the 16th of Novembre, 1881.

2nd, Mortgage Bank of México, autorized by Decree of May 22nd, 1883.

3rd, Bank of London and México, authorized in October, 1886.

4th, Mexican Bank of Chihuahua, authorized by Decree of June 1st, 1889.

5th, Miner's Bank of Chihuahua, authorized by Decree of June 1st, 1888.

6th, Bank of Chihuahua.

7th, Bank of Yucatan and Mérida.

8th, Mercantile Bank of Yucatan, Mérida.

9th, Branch of the National Bank of El Paso, Texas, in Ciudad Juárez, (Paso del Norte).

10th. Commercial Bank of Chihuahua.

11th, Bank of Durango.

12th, Bank of Zacatecas.

According to the last Report published by the Secretary of

the Treasury, the average monthly circulation of Bank Notes during the fiscal year, 1889 and 1890, reached $ 21.065,613 00 and the average monthly stock of silver in hand came to $ 15.572,112 00, against $ 18.860,035 00, and $ 17.574,106 00, respectively in the preceding year, showing an increase of $ 2.205,578 00, in the average of Bank Note issue.

The Assets and Liabilities, extracted from the Published Balances of June 30th, 1890, are shown in the following table:

ASS

PAID UP CAPITAL.		CASH IN HAND.		BILLS DISCOUNTED.		LOAN ON COLLATE. MORTGA
[illegible]	00	11.531,690	87	12.626,339	65	1.777,824
...	...	3.849,163	77	7.398,616	66	.....
...	...	440,836	07	1.547,211	56	1.010,333
...	...	153,148	37	1.399,845	43	.....
...	...	105,096	47	226,581	49	277,814
[illegible]	00	62,352	93	160,950	63	.....
[illegible]	00	167,972	29	577,314	37	.....
[illegible]	00	130,184	16	428,318	34	.....
...	...	36,392	69	57,742	26	.....
[illegible]	00	82,575	25	265,206	59	.....
[illegible]	00	11,793	50	151,040	27	48,405
[illegible]	00	203,828	65	223,836	84	68,734

LIABIL

	PAID UP CAPITAL.		NOTE ISSUE.		MORTGAGE BONDS.	
	20.000,000	00	14.029,473	00	.....	...
[illegible]	1 500,000	00	5.733,266	00	.....	...
	5.000,000	00	.....	...	477,100	00
	600,000	00	233,896	25	.....	...
[illegible]	808,509	76	167.582	32	.....	...
	542,272	00	137,719	50	.....	...
	700,000	00	348,590	00	.....	...
[illegible]	500,000	00	229,865	00	.....	...
	80,000	00	.....	...	.....	...
[illegible]	600,000	00	161,280	75	.....	...
	500,000	00	58.053	00	.....	...
	600,000	00	73,593	00	.....	...

[illegible] generaly caused in trade by the present depr
[illegible]

ETS.

	ACCOUNTS CURRENT.		REAL ESTATE.		PROPERTY IN MEXICO.		UNISSUED STOCK.	TOTALS.	
18	16.505,118	86	168,000	00	.....	...	.....	54.608,473	56
...	5.716,687	59	.....	...	73,000	00	.....	17.037,468	02
22	1.160,751	98	.....	...	.....	...	1.500,000	5.659,162	83
...	78 199	66	.....	...	.....	...	.....	1.631,193	46
38	608,744	18	6,250	57	.....	...	.....	1.224,487	84
...	285,468	05	.....	...	.....	...	.....	758,771	61
...	104,386	35	.....	...	.....	...	.....	1.199,673	01
...	96,730	23	.....	...	.....	...	.....	821.899	40
...	59,122	31	2,290	24	.....	...	.....	155.547	50
...	146,024	16	.....	...	.....	...	.....	849,806	00
90	101,999	47	.....	...	.....	...	.....	613,238	84
91	181,706	61	.....	...	.....	...	.....	1.038,107	01

ITIES.

ACCOUNTS CURRENT.		RESERVE FUND.		CONTINGENCY FUND.		Second Contingency Fund.		TOTALS.	
18.587,442	64	991,557	92	800,000	00	250,000	00	54.608,473	56
9.714,202	02	90,000	00	.....	...	.....	...	17.035,4 8	02
182,062	83	.....	...	.....	...	.....	...	5.659,162	83
774.297	21	15 000	00	8,000	00	.....	...	1.631,193	46
225.895	76	22,500	00	.....	...	.....	...	1.224,487	84
78,780	11	.....	...	.....	...	.....	...	758,771	61
151,083	01	.....	...	.....	...	.....	...	1.199,673	01
92,034	40	.....	...	.....	...	.....	...	821,899	40
125,547	50	.....	...	.....	...	.....	...	155,547	50
88,525	25	.....	...	.....	...	.....	...	849,806	00
55,181	84	.....	...	.....	...	.....	...	613,238	84
364,514	01	.....	...	.....	...	.....	...	1.038,107	01

cation of silver, the Mexican banks have continued their ordinary business without

According to the latest information, the revenues of the State Governments amount to $10.345,190, as follows:

Aguascalientes	$	106,490
Campeche		156,000
Coahuila		170,950
Colima		122,850
Chiapas		150,400
Chihuahua		300,000
Durango		235,000
Guanajuato		1.050,000
Guerrero		210,000
Hidalgo		410,000
Jalisco		1.020,000
México		420,000
Michoacan		600,000
Morelos		296,000
Nuevo León		225,000
Oaxaca		655,000
Puebla		915,000
Querétaro		206.000
San Luis Potosí		350,000
Sinaloa		350,000
Sonora		280,000
Tabasco		158,000
Tamaulipas		134,000
Tlaxcala		125,000
Veracruz		702,200
Yucatan		502,000
Zacatecas		495,000
Total	$	10.345,190

The Municipal Revenues are estimated as follows:

Federal District.—Latest Reports	.....	$ 3.258,899
Aguascalientes.—Mean for 5 Years	.....	58,960
Campeche.	„	67,560
Coahuila.	„	170,000
Colima.	„	52,600
Chiapas.	„	50,000
Chihuahua.	„	„
Durango.	„	„
Guanajuato.	„	570,000
Guerrero.	„	85,000
Hidalgo.	„	331,000
Jalisco.	„	464,000
Michoacan.	„	180,000
México.	„	176,000
Morelos.	„	127,000
Nuevo Leon.	„	155,800
Oaxaca.	„	101,350
Puebla.	„	915,750
Querétaro.	„	57,000
San Luis Potosí.	„	„
Sinaloa.	„	„
Sonora	„	134,500
Tabasco.	„	83,800
Tamaulipas.	„	„
Tlaxcala.	„	26,220
Veracruz.	„	980,000
Yucatan.	„	162,850
Zacatecas.	„	„
Territory of Tepic.	„	115,560
„ Lower California.	„	31,750
		$ 8.295,599

The data relative to Chihuahua, Durango, San Luis Potosí, Sinaloa and Zacatecas are not included, as they have not been received from the Department of Fomento.

PROPERTY VALUATION.

STATES.	Urban.	Rural.	TOTAL.
Aguascalientes.....$	1.768,435	3.351,258	5.119,693
Campeche.....	552,509	691,286	1.243,795
Colima.....	1.660,905	1.674,561	3.335,466
Coahuila.....	2.682,496	7.037,300	9.719,796
Chihuahua.....	1.846,730	3.507,000	5.353,730
Chiapas.....	500,000	2.930,212	3.430,212
Durango.....	2.653,381	4.404,548	7.057,879
Guanajuato.....	9.665,977	20.405,559	30.071,686
Guerrero.....	1.993,712	11.502,400	13.497,112
Hidalgo.....	2.559,311	11.825,426	14.384,737
Jalisco.....	21.404,529	33.052,342	54.456,871
México.....	4.444,651	18.946,445	23.891,096
Michoacan.....	8.381,994	15.733,201	24.115,195
Morelos.....	1.064,059	4.193,315	5.257,374
Nuevo Leon.....	5.029,463	4.555,327	9.584,790
Oaxaca.....	6.178,534	5.562,766	11.741,300
Puebla.....	15.411,678	14.609,866	30.021,544
Querétaro.....	5.686,547	5.760,000	11.446,547
San Luis Potosí.....	5.625,608	7.928,048	13.553,656
Sinaloa.....	3.530,226	2.478,656	6.008,882
Sonora.....	2.350,600	4.872,900	7.223,500
Tabasco.....	1.622,490	2.968,785	4.591.275
Tamaulipas.....	4.264,665	1.950,270	6.214,935
Tlaxcala.....	1.957,026	5.088,690	7.045,716
Veracruz.....	32.561,926	15.276,652	47.838,578
Yucatán.....	2.500,000	2.874,508	5 374,508
Zacatecas.....	5.774,416	9.841,235	15.615,651
Federal District.....	101.917,241	7.931,737	109.848,978
Territory of Lower California..	459,326	3.896,200	4.355,526
Territory of Tepic.....	2.354,800	2.817,580	5.172,380
Totals .....$	258.403,185	237.669,173	496.072,358

These data are very far from being exact, and as has often been proved are only useful as estimates for taxation. From a comparison of these figures with others which show the real value of property in different localities, it has been clearly shown that the above estimate is about two-thirds of the real value of the property. This can be fairly estimated to be at least one thousand millons of dollars, without including public buildings, civil or religious.

IV

Maritime movement in the Ports of the Republic during the Financial year 1888 to 1889.

FOREIGN TRADE.

Entries.

PORTS.	STEAMERS.		SAILING VESSELS.		TOTALS.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
Acapulco	53	89,280	8	3,949	61	93,179
Altata	...	.....	4	1,576	4	1,576
Magdalena Bay	6	3,777	1	22	7	3,799
Campeche	19	33,810	19	2,998	38	36,808
Coatzacoalcos	...	.....	20	5,770	20	5,770
Frontera	32	32,469	16	4,110	48	36,579
Guaymas	3	2,081	15	7,634	18	9,665
Isla del Carmen	...	.....	100	27,701	100	27,701
La Paz	18	11,640	1	38	19	11,678
Manzanillo	3	3,503	6	3,003	9	6,506
Mazatlan	34	55,120	16	6,908	50	62,028
Progreso	148	228,285	100	12,210	248	240,495
Puerto Angel	3	3,858	.....	.....	3	3,858
Salina Cruz	4	4,904	5	2,071	9	6,975
San Blas	3	4,488	3	1,102	6	5,590
Santa Rosalia	6	6,273	22	13,195	28	19,468
Soconusco	13	16,510	1	216	14	16,726
Tampico	22	37,181	27	4,724	49	41,905
Todos Santos	161	50,100	12	928	173	51,028
Tonalá	.....	.....	1	28	1	28
Túxpan	17	26,992	23	5,555	40	32,547
Veracruz	204	355,659	78	21,806	282	377,465
	749	965,880	478	125,539	1,227	1.091,369

Departures.

PORTS.	STEAMERS.		SAILING VESSELS.		TOTALS.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
Acapulco	52	88,207	3	1,982	55	90,189
Altata	...	.....	8	3,848	8	3,848
Magdalena Bay	8	5,344	...	.....	8	5,344
Campeche	18	30,075	19	3,309	37	33,384
Coatzacoalcos	...	.....	41	10,843	41	10,843
Frontera	18	29,865	15	4,147	33	34,012
Guaymas	...	.....	8	5,604	8	5,604
Isla del Carmen	2	953	132	37,498	134	38,451
La Paz	19	12,944	4	2,059	23	15,003
Manzanillo	3	3,503	6	3,334	9	6,837
Mazatlán	31	49,887	10	5,197	41	55,084
Progreso	151	235,076	109	10,921	260	245,997
Puerto Angel	5	5,950	.....	.....	5	5,950
Salina Cruz	...	.....	5	2,091	5	2,091
San Blas	...	.....	2	501	2	501
Santa Rosalía	2	2,852	16	12,836	18	15,688
Soconusco	12	14,712	1	216	13	14,928
Tampico	29	48,942	23	4,088	52	53,030
Todos Santos	161	49,936	10	790	171	50,726
Tonalá	.....	.....	...	.....	.....	.....
Túxpan	17	27,103	20	5,539	37	32,642
Veracruz	193	353,796	45	13,101	243	366,897
	726	959,145	477	127,904	1,203	1.087,049

NATIONALITIES OF VESSELS.

Entries.

	STEAMERS.		SAILING VESSELS.		TOTALS.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
German	31	46,840	68	26,371	99	73,211
Brazilian	...	.....	2	787	2	787
Chilean	...	.....	1	800	1	800
Danish	...	.....	14	3,705	14	3,705
Dominican	...	.....	...	.....	...	.....
Spanish	76	181,201	24	2,851	100	184,052
Carried forward	107	228,041	109	34,514	216	262,555

	STEAMERS.		SAILING VESSELS.		TOTALS.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
Brought forward.	107	228,041	109	34,514	216	262,555
French	24	54,449	12	4,855	36	59,304
Honduran	...	.....	2	30	2	30
Hawaian	1	1,247	...	...	1	1,247
British	115	146,243	47	15,482	162	161,725
Italian	.....	.....	2	836	2	836
National	36	15,266	46	4,252	82	19,518
Nicaraguan	...	.....	1	28	1	28
North American	468	519,004	175	38,693	638	557,697
Norwegian	3	1,580	72	23,530	75	25,110
Swedish	...	.....	12	3,319	12	3,319
	749	965,880	478	125,589	1,227	1.091,369

Departures.

	STEAMERS.		SAILING VESSELS.		TOTALS.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
German	36	53,569	69	24,782	105	78,351
Brazilian	...	.....	1	394	1	394
Chilean	...	.....	1	800	1	800
Danish	...	.....	11	2,766	11	2,766
Dominican	...	.....	1	147	1	147
Spanish	71	172,234	26	3,146	97	175,380
French	24	54,449	11	4,679	35	59,128
Honduran	...	.....	1	15	1	15
Hawaian	1	1,247	...	.....	1	1,247
British	131	175,579	58	20,076	189	195,655
Italian	.....	.....	3	1,020	3	1,020
National	23	14,906	45	3,250	68	18,156
North American	438	486,068	168	40,705	606	526,773
Norwegian	2	1,093	69	22,410	71	23,503
Swedish	...	.....	13	3,714	13	3,714
	726	959,145	477	127,904	1,203	1.087,049

The foreign ports in communication with Mexico, are:

Germany.—Hamburg and Bremen.

Belgium.—Amberes.

Brazil.—Pará, Puerto Natal and Santos.

Columbia.—Barranquilla, Cartajena, Colon, Panamá and Sabanilla.

Costa Rica.—Port Limon and Punta Arenas.

Chile.—Iquique and Valparaiso.

Denmark.—St. Thomas.

Ecuador.—Guayaquil.

Spain.—Barcelona, Cádiz, Santander, Habana, Cárdenas, Cienfuegos, Puerto Rico, Puerto Isabel (Africa).

United States.—Apalichocola, Astoria, Boston, Brashear, San Diego California, San Francisco California, Camden, Canal, Cayo Hueso, Chester, Eureka, Philadelphia, Galveston, Georgetown, Lake Charles, Mobile, Morgan City, New Orleans, New York, Pensacola, Pascagoula, Pearlington, Angeles, Port Townsend, Portland and Wilmington.

France.—Boulogne, Burdeaux, Havre, Marseilles and San Nazaire, Cayenne, Guadalupe, Martinique, Point-á-Pitre and Senegal.

Guatemala.—Champerico and San José.

Hawai.—Honolulú.

Holland.—Rotterdam and Curaçao.

Honduras.—Amapala.

England.—Cardiff, Falmouth, Fleetwood, Goole, Grimsby, Liverpool, London, Middlesborough, New Castle, New Port, Queenstown, Shields, Southampton, Tabot, Barbadoes, Berbice, Bermuda, Burrard, Demerara, Georgetown, Kingston, La Antigua, Nanaimo, San Vicente, Trinidad, Australia, Sidney.

Italy.—Genoa and Leghorn.

Nicaragua.—Corinth.

Norway.—Stanvanger.

Argentine Republic.—Buenos Aires.

Venezuela.—Bolivar, La Guaira, Maracaibo, Puerto Cabello and Trujillo.

FOREIGN TRADE.

Entries.

COUNTRIES.	STEAMERS.		SAILING VESSELS.		TOTALS.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
Germany	30	44,889	24	8,353	54	53,242
Belgium	...	.....	...	.....	...	.....
Brazil	...	.....	7	2,158	7	2,158
Columbia	64	98,477	15	3,849	79	102,326
Costa Rica	...	.....	3	632	3	632
Chile	1	80	1	800	2	880
Denmark	...	.....	3	1,042	3	1,042
Ecuador	...	.....	2	959	2	959
Spain	71	140,525	27	3,833	98	144,358
United States	460	469,329	183	42,459	643	511,788
France	26	57,557	23	8,093	49	65,650
Guatemala	1	890	4	1,324	5	2,214
Hayti	...	.....	1	376	1	376
Hawai	...	.....	1	1,297	1	1,297
Holland	...	.....	2	507	2	507
Honduras	...	.....	...	.....	...	.....
England	96	154,083	157	43,801	253	197,884
Italy	...	.....	1	559	1	559
Nicaragua	...	.....	1	28	1	28
Norway	...	.....	...	.....	.....	.....
Argentine Rep	...	.....	2	591	2	591
Venezuela	...	.....	15	4,025	15	4,025
Orders	...	.....	6	853	6	853
	749	965,880	478	125,539	1,227	1.091,369

Departure.

COUNTRIES.	STEAMERS.		SAILING VESSELS.		TOTALS.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
Germany	42	74,995	40	14,597	82	89,592
Belgium	1	1,486	...	.....	1	1,486
Columbia	55	85,898	...	.....	55	85,898
Costa Rica	...	.....	1	739	1	739
Carried forward..	98	162,379	41	15,336	139	177,715

	STEAMERS.		SAILING VESSELS.		TOTALS.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
Brought forward.	98	162,379	41	15,336	139	177,715
Chile	1	1,898	1	597	2	1,995
Spain	59	138,920	18	1,689	77	140,609
United States	486	510,385	201	50,933	687	561,318
France	26	59,153	11	3,570	37	62,723
Guatemala	...	.....	1	212	1	212
Hayti	1	366	...	.....	1	366
Hawai	...	.....	2	1,498	2	1,498
Holland	...	.....	2	556	2	556
Honduras	...	.....	1	675	1	675
England	54	85,544	192	51,552	246	137,096
Nicaragua	...	.....	2	957	2	957
Norway	...	.....	1	264	1	264
Venezuela	...	.....	1	15	1	15
Orders	1	1,000	8	50	4	1,050
	726	959,145	477	127,904	1,203	1.087,049

COAST TRADE.

Entries.

PORTS.	STEAMERS.		SAILING VESSELS.		TOTALS.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
Acapulco	31	50,689	20	1,024	51	51,713
Altata	92	15,408	38	2,854	130	18,262
Magdalena Bay	8	5,344	3	32	11	5,376
Campeche	53	9,570	395	16,300	448	25,870
Coatzacoalcos	52	8,384	33	4,142	85	12,476
Frontera	168	25,203	122	4,437	290	29,640
Guaymas	98	18,627	169	5,760	267	24,387
Isla del Cármen	116	18,518	280	15,535	396	34,053
La Paz	49	27,088	250	7,712	299	34,750
Manzanillo	40	40,492	20	1,756	60	42,248
Mazatlan	124	64,277	224	8,923	348	73,200
Progreso	180	94,898	292	16,912	472	111,810
Puerto Ángel	20	23,800	8	180	28	23,980
Salina Cruz	19	23,114	1	708	20	23,822
Carried forward...	1,050	425,312	1,855	86,275	2,845	511,587

CUSTOMS AGENCIES.	STEAMERS. Ships.	STEAMERS. Tons.	SAILING VESSELS. Ships.	SAILING VESSELS. Tons.	TOTALS. Ships.	TOTALS. Tons.
Brought forword...	1,050	425,312	1,855	86,275	2,845	511,587
San Blas.....	52	40,430	137	6,825	189	46,755
San José del Cabo.....	36	23,844	21	472	57	24,316
Santa Rosalía.....	50	5,910	133	2,094	183	8,004
Soconusco.....	12	14,712	,,	,,	12	14,712
Tampico.....	25	36,636	28	3,021	53	39,657
Todos Santos.....	62	17,453	6	150	68	17,603
Tonalá.....	28	28,018	,,	,,	28	28,018
Túxpan.....	19	2,046	92	4,899	111	6,945
Veracruz.....	112	84,764	206	12,539	318	47,303
	1,441	629,125	2,478	115,775	3,919	744,900
CUSTOMS AGENCIES.						
Agiabampo.....	35	2,084	51	1,722	86	3,806
Alvarado.....	,,	,,	27	874	27	874
Cape San Lucas.....	6	3,040	4	96	10	3,136
Celestun.....	,,	,,	347	9,018	347	9,018
Cozumel.....	,,	,,	128	1,601	128	1,601
Chamela.....	3	1,758	4	665	7	2,423
Champoton.....	,,	,,	222	3,834	222	3,834
Aguada Island.....	,,	,,	173	3,379	173	3,379
Mujeres ,,.....	,,	,,	177	2,774	177	2,774
María Madre ,,.....	,,	,,	54	3,400	54	3,400
Jonuta.....	65	4,645	75	1,799	140	6,444
Las Peñas.....	,,	,,	48	2,312	48	2,312
Mulegé.....	39	4,354	105	3,894	144	8,248
Nautla.....	,,	,,	53	2,502	53	2,502
Palizada.....	26	2,397	250	5,240	276	7,637
Perehuete.....	,,	,,	111	2,950	111	2,950
San Juan Bautista.....	156	10,315	96	2,775	252	13,090
Santecomapan.....	,,	,,	17	486	17	486
Teacapan.....	,,	,,	15	465	15	465
Tecoanapa.....	2	2,980	20	547	22	3,527
Tlacotalpan.....	38	16,500	74	2,592	112	19,092
Tonalá.....	5	383	37	1,762	42	2,145
Topolobampo.....	2	160	91	1,634	93	1,794
	377	48,616	2,179	56,321	2,556	104,937
Entries in Ports and Customs Agencies.....	1,818	677,741	4,657	172,096	6,475	849,837

Departures.

	STEAMERS.		SAILING VESSELS.		TOTALS.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
Acapulco	34	55,039	25	2,544	59	57,583
Altata	92	15,408	36	1,412	128	16,820
Magdalena Bay	6	3,777	2	27	8	3,804
Campeche	50	9,295	412	15,355	462	24,650
Coatzocoalcos	55	8,608	11	375	66	8,988
Frontera	173	25,238	134	4,587	307	29,825
Guaymas	101	20,783	171	7,942	272	28,675
Cármen Island	105	15,394	251	6,684	356	22,078
La Paz	50	27,937	241	6,095	291	34,032
Manzanillo	39	39,930	20	1,436	59	41,366
Mazatlan	128	66,964	227	11,148	355	78,112
Progreso	207	159,232	289	19,472	496	178,704
Puerto Ángel	18	21,708	8	180	26	21,888
Salina Cruz	28	28,018	,,	,,	28	28,018
San Blas	56	44,970	140	6,949	196	51,919
San José del Cabo	37	24,734	20	470	57	25,204
Santa Rosalía	49	5,769	136	1,728	185	7,497
Soconusco	18	16,510	,,	,,	18	16,510
Tampico	17	22,117	31	3,235	48	25,352
Todos Santos	64	17,230	6	248	70	17,478
Tonalá	28	28,018	,,	,,	28	28,018
Túxpan	19	418	91	4,314	110	4,732
Veracruz	115	86,067	224	19,172	339	55,239
	1,474	693,114	2,475	118,378	3,949	806,487
CUSTOMS AGENCIES.						
Agiabampo	35	2,084	51	1,735	86	3,819
Alvarado	,,	,,	25	492	25	492
Cape San Lúcas	6	3,040	4	96	10	3,136
Celestun	,,	,,	356	8,611	356	8,611
Cozumel	,,	,,	122	1,605	122	1,605
Chamela	8	1,758	8	69	6	1,827
Champoton	,,	,,	220	3,751	220	3,751
Aguada Island	,,	,,	173	3,395	173	3,395
Mujeres ,,	,,	,,	156	2,513	156	2,513
María Madre ,,	,,	,,	54	2,852	54	2,852
Carried forward...	44	6,872	1,164	25,129	1,208	32,001

CUSTOMS AGENCIES.	STEAMERS.		SAILING VESSELS.		TOTALS.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
Brought forward...	44	6,872	1,164	25,129	1,208	32,001
Jonuta.....	65	4,645	75	1,799	140	6,444
Las Peñas.....	,,	,,	47	2,130	47	2,130
Mulegé.....	40	4,452	98	3,473	138	8,195
Nautla.....	,,	,,	51	1,457	51	1,457
Palizada.....	23	2,139	212	4,376	235	6,515
Perihuete.....	,,	,,	108	2,878	108	2,878
San Juan Bautista,.....	156	10,245	96	2,723	252	12,968
Santecomapan.....	,,	,,	16	414	16	414
Teacapan.....	,,	,,	19	581	19	581
Tecoanapa.....	2	2,980	19	588	21	3,588
Tlacotalpan.....	38	16,509	75	2,607	113	19,110
Tonalá.....	5	383	36	1,516	41	1,899
Topolobampo.....	2	160	91	1,610	93	1,770
	375	48,395	2,107	51,511	2,482	99,906

GENERAL SUMMARY OF MARITIME MOVEMENT.

1888–1889.

Entries.

PORTS.	STEAMERS.		SAILING VESSELS.		TOTALS.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
Foreign Trade.....	749	965,830	478	125,539	1,227	1.091,369
Coast Trade.....	1,818	677,741	4,657	172,096	6,475	849,837
	2,567	1.643,571	5,135	297,635	7,702	1.941,206

Departures.

	STEAMERS.		SAILING VESSELS.		TOTALS.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
Foreign Trade.....	726	959,145	477	127,904	1,203	1.087,049
Coast Trade.....	1,849	741,509	4,582	164,884	6,431	906,393
	2,575	1.500,654	5,059	292,788	7,634	1.993,442

MEXICAN CONSULAR AGENCIES ABROAD.

Germany.—Consulates: Berlin, Frankfort on Main, Hamburg, Karlsruhe, Leipzic, Mannheim and Mayence.

Viceconsulates: Bremen, Berlin and Frankfort on Main.

Argentine Republic.—Consulate: Buenos Aires.

Belgium.—Consulate: Amberes.

Viceconsulates: Amberes, Brussels and Ghent.

Bolivia.—Consulate: La Paz.

Costa Rica.—Consulate: San José.

Chile.—Consulate: Valparaiso.

Dominican Republic.—Consulate general: Santo Domingo.

Denmark.—Consulate: St. Thomas.

Viceconsulate: St. Thomas.

Spain.—Consulates general: Barcelona, Habana.

Consulates: Bilbao, Cádiz, Córdoba, La Coruña, Granada, Gijon, Madrid, Málaga, Manila, Santa Cruz de Tenerife, Santander, San Sebastian, Sevilla and Valencia.

Viceconsulates: Alicante, Barcelona, Cádiz, La Coruña, Granada, Huelva, Jerez de la Frontera, Irun, Las Palmas (Grand Canaries) Madrid, Málaga, Palma de Mayorca, Puerto Rico, Santa María, Santiago de Cuba and Vigo.

United States of America.—Consulates general: New York and San Francisco California.

Consulates: Boston, Brownsville, Chicago, Deming, Eagle Pass, El Paso (Texas), Philadelphia, Galveston, Laredo Texas, Los Angeles, Nogales, New Orleans, Rio Grande Texas, Roma Texas, San Antonio Texas, San Diego California and St Louis Missouri.

Viceconsulates: Boston, Kansas City, Pensacola and Tucson.

United States of Columbia.—Consulates: Caracas and Maracaibo.

Viceconsulates: Carúpano and La Guaira.

France.—Consulate general: Paris.

Consulates: Bayonne, Bordeaux, Havre, Marseilles, Nice, Saint Nazaire.

Viceconsulates: Fort de France, San Juan de Luz, Hendaya and Saint Maló.

Great Britain.—Private commercial Agencies: Cardiff, Hongkong, London, Newport and Swansea.

Consulate general: Liverpool.

Consulates: Bridgetown (Barbadoes), Dublin, Gibraltar, Glasgow, Great Grimsby, Manchester, Montreal (Canada), Southampton.

Viceconsulates: Barrow-on-Furness, Dover, Falmouth, Liverpool and Newcastle-on-Tyne.

Guatemala.—Consulates: Guatemala and Quetzaltenango.

Viceconsulates: Libertad and Retalhulen.

Hayti.—Consulate: Port-au-Prince.

Hawai.—Consulate: Honolulú.

Italy.—Consulate general: Genoa.

Consulates: Naples and Rome.

Viceconsulates: Florence, Genoa, Messina and Palermo.

Low Countries.—Consulates: Amsterdam and Rotterdam.

Portugal.—Consulate general: Lisbon.

Viceconsulates: Lisbon and Oporto.

Salvador.—Consulate: San Salvador.

Sweden and Norway.—Consulates: Gothemburg and Stockholm.

Switzerland.—Consulate general: Geneva.

Consulate: Vevey.

Uruguay.—Consulate Montevideo.

Table which shows the equivalents of foreign money in Mexican dollars and cents, for the payment of duties under the present Customs Tariff.

COUNTRIES.	COINS.	METALS.	Equivalent in Mexican dollars and cents.
Germany	Mark	Gold	$ 0.25
United States of America	Dollar	Gold & Silver	1.00
British America	,,	Gold	1.00
Central America	,,	Silver	0.90
Argentine Republic	,,	Gold & Silver	1.00
Austria	Florin	Silver	0.50
Belgium	Franc	Gold & Silver	0.20
Bolivia	Boliviano	Silver	0.90
Brazil	Milreis	Gold	0.55
Chile	Dollar	Gold & Silver	0.95
China	Tael	Silver	1.25
Columbia	Dollar	,,	0.90
Cuba	,,	Gold & Silver	1.00
Denmark	Crown	Gold	0.27
Ecuador	Dollar	Silver	0.90
Egypt	Piastre	Gold	0.05
Spain	Peseta	Gold & Silver	0.20
,,	Dollar	,, ,,	1.00
France	Franc	,, ,,	0.20
Great Britain	Sovereign	Gold	5.00
Greece	Drachma	Gold & Silver	0.20
Hayti	Gourde	,, ,,	1.00
India	Rupee	Silver	0.40
Italy	Lira	Gold & Silver	0.20
Japan	Yen	Silver	1.00
Norway	Crown	Gold	0.27
Low Countries	Florin	Gold & Silver	0.40
Paraguay	Dollar	Gold	1.00
Perú	Sol	Silver	0.90
Portugal	Milreis	Gold	1.08
Puerto Rico	Dollar	,,	1.00
Russia	Ruble	Silver	0.70
Saint Thomas	Dollar	Gold & Silver	1.00
Sandwich Islands	,,	Gold	1.00
Sweden	Crown	,,	0.27
Switzerland	Franc	Gold & Silver	0.20
Turkey	Piastre	Gold	0.05
Uruguay	Patacon	,,	1.00
Venezuela	Bolivar	Gold & Silver	0.20

LIGHT-HOUSES IN THE PORTS.

The Benito Juarez Light-house (Veracruz).—Of the fourth dioptric order; white light with flashes at intervals of one minute; tower of a light blue color; height above the level of the sea 31.50 metres; light visible for a distance of 15 miles; geographical situation 19° 12′ 07″ 07 N. latitude, and 96° 07′ 13″ 08 longitude W. from Greenwich.

Ulua Light-house (Veracruz).—Of the third catoptric order; white light, showing two flashes and an eclipse, completing a revolution every 45 seconds; altitude above sea level 25.25 metres; light visible for a distance of 15 miles. Geographical situation 19° 12′ 38″ 30 N. latitude, and 96° 6′ 5″ longitude W. Greenwich.

Tampico Light-house.—Of the second dioptric order; white light, giving three flashes every thirty seconds followed by a partial eclipse. A hexagonal iron tower on masonry painted red. Altitude over the sea 43 metres. Light visible for a distance of 20 miles. Geographical situation 20° 16′ N. latitude, and 98° 2′ longitude W. Greenwich.

Alvarado Light-house.—Of the sixth catoptric order, with a white fixed light, visible a distance of 9 miles. It is erected on a mast inside of an ancient fortress, situated on the left bank of the river Papaloapan, at a height of 7 metres above sea level. Geographical situation 18° 46′ 30″ N. latitude, and 95° 41′ longitude W. Greenwich.

Coatzacoalcos Light-house.—Of the fifth catoptric order, with a fixed white light; placed in the fort of Coatzacoalcos on the left bank of the river of the same name, and distant half a mile from the beach. It has an elevation of 17 metres above sea level and is visible for a distance of 12 miles. Geographical situation 18° 07′ 54″ N. latitude, and 94° 20′ 7″ longitud W. Greenwich.

Frontera Light-house.—Of the fourth dioptric order, white light, giving a flash every forty seconds with partial eclipses.

Situated in an octagonal iron tower placed on masonry, and painted a light gray color. Elevation over sea level 23.53 metres and the light visible for a distance of 13½ miles. Geographical situation 18° 36′ 06″ N. latitude and, 92° 37′ 13″ latitude W. Greenwich.

Xicalanco Light-house.—Ot the second dioptric order, with a white light and flashes every 30 seconds. It is placed on a tower of masonry, painted white and red, and has an elevation of 30.30 metres over the sea level, and its light is visible for a distance of 18 miles. Its geographical situation is 18° 37′ 30″ N. latitude, and 91° 54′ 18″ longitude west from Greenwich.

Campeche Light-house.—Of the fifth dioptric order, with a fixed white light, visible for a distance of 14 miles. It is situated in the center of the city, at an elevation of 72 metres above sea level. Geographical situation 19° 50′ 30″ N. latitude, and 90° 32′ 20″ longitude west of Greenwich.

Celestun Light-house.—Of the sixth catoptric order with a fixed white light, visible for a distance of 10 miles. It is situated on a mast and has an elevation of 10 metres over sea level. Geographical situation 20° 51′ 0″ N. latitude and 90° 24′ 20″ longitude west of Greenwich.

Sisal Light-house.—Like the preceding one it is of the sixth catoptric order with a fixed white light, visible for a distance of 10 miles. It is situated on an old fort with an elevation of 20.75 metres over sea level. Geographical situation 21° 10′ N. latitude and 90° 03′ longitude W. Greenwich.

Progreso Light-house.—Of the fifth dioptric order with a fixed white light, visible at a distance of 12 miles. It is placed on the N.E. corner of the customhouse, at an elevation of 17.86 metres above sea level. Geographical situation 21° 17′ N. latitude and 89° 39′ 30″ longitude W. of Greenwich.

Chaymax Light-house.—Of the fourth dioptric order, with a constant white light giving flashes every 80 seconds. It is visible for a distance of 24 miles. It is situated on a skeleton iron tower on a hill bearing 22° 3′ S.W. of the S.E. point of

the Island of Pajaros, and 18° W. from the S.W. point of the same Island. It has an elevation of 105.67 metres over the sea level. Geographical position 27° 10′ 37″ N. latitude and 110° 54′ 14″ W. of Greenwich.

Mazatlan Light-house.—Of the fourth dioptric order, on the Fresnel system with a fixed white light, visible for a distance of 25 miles. It is situated on the point of the Creston Hill, at an elevation of 157 metres above sea level. Geographical position 23° 10′ 37″ N. latitude and 106° 24′ 45″ longitude W. of Greenwich.

Acapulco Light-house.—Of the fourth catadioptric order with a fixed white light visible at a distance of 25 miles. It is situated in a wooden tower covered with zinc plates, at an elevation of 106.67 metres above sea level. Geographical position 16° 49′ 06″ N. latitude and 99° 56′ 03″ longitude W. of Greenwich.

V

FOREIGN COMMERCE.

IMPORTATIONS.

The United States of Mexico maintain an active trade with the United States of America, France, England, Germany and Spain, and on a smaller scale with Italy, Belgium, Switzerland, Austria, Holland, India and the American Republics.

The following table shows the ports open to foreign commerce and the entries therein during the financial year 1888 and 1889.

	Value of imports in thousands.	Duties levied in dollars.
Matamoros (Tamaulipas).....	802	761
Tampico ,, ...	514	408
Tuxpan (Veracruz).....	164	87
Veracruz ,, ...	16,446	11,767
Coatzacoalcos ,, ...	1	,,
Frontera (Tabasco)..	189	152
Carmen Island (Campeche).....	112	60
Campeche ,, ...	186	141
Progreso (Yucatan).....	2,430	1,467
Todos Santos (Lower California).....	149	79
Magdalena Bay ,, ...	10	5
Cape San Lucas closed in 1888.....	,,	,,
San José del Cabo opened in 1888....	11	4
La Paz.....	152	68
Carried forward.....	21,166	14,998

	Value of imports in thousands.	Duties levied in dollars.
Brought forward.....	21,166	14,998
Santa Rosalía.....	255	63
Guaymas (Sonora).....	534	310
Altata (Sinaloa).....	,,	,,
Mazatlan ,, ...	1,592	1,047
San Blas (Tepic).....	331	183
Manzanillo (Colima).....	157	73
Acapulco (Guerrero).....	231	109
Puerto Angel (Oaxaca).....	10	5
Salina Cruz ,, ...	55	36
Tonalá (Chiapas).....	92	59
Soconusco ,, ...	108	79
Tijuana ,, ...	127	39
Sásabe (Sonora).....	8	5
Nogales ,, ...	739	428
Palominas ,, ...	55	17
Ascension closed in 1888 (Chihuahua)	4	2
Las Palomas ,, ...	28	10
Paso del Norte or C. Juárez. ,, ...	5,794	1,697
Piedras Negras or C. Porfirio Diaz (Coahuila).....	2,732	1,314
Laredo (Tamaulipas).....	5,728	1,599
Guerrero ,, ...	85	48
Mier ,, ...	142	124
Camargo ,, ...	49	31
Zapaluta (Chiapas).....	2	1
Totals.....	40,024	22,478

The clasification of imports is as follows.

1 Duty free.....	13,506	,,
2 Cottons.....	7,534	7,447
3 Linen and flax.....	674	672
4 Woollens.....	1,613	1,986
Carried forward.....	23,327	10,105

	Value of imports in thousands.	Duties levied in dollars.
Brought forward	23,327	10,105
5 Silks	394	379
6 Silks with mixture	395	411
7 Food products	4,894	3,789
8 Stone and earth	82	41
9 Glass and porcelain	608	687
10 Gold, silver and platinum	321	28
11 Iron and steel	1,510	1,260
12 Copper and its alloys	593	324
13 Tin, lead and zinc	76	39
14 Fancy goods	659	506
15 Machinery and apparata	539	128
16 Wheeled vehicles	214	116
17 Arms, powder and ammunition	280	173
18 Wood and its manufactures	474	369
19 Paper, pasteboard and their applications	1,352	1,161
20 Leather goods	414	290
21 Drugs and chemical products	1,698	997
22 Sundries	2,194	1,675
	40,024	22,478

The imports were from the following countries.

United States of America.

1 Duty free	10,293	,,
2 Cottons	3,835	2,743
3 Linen and flax	81	87
4 Woollens	380	509
5 Silks	73	70
6 Silks with mixtures	48	48
7 Food products	2,115	1,742
8 Stone and earth	26	15
Carried forward	16,851	5,214

	Value of imports in thousands.	Duties levied in dollars.
Brought forward.....	16.851	5,214
9 Glass and porcelain.....	243	255
10 Gold, silver and platinum.....	37	3
11 Iron and steel.....	815	566
12 Copper and its alloys.....	261	128
13 Tin, lead and zinc.....	21	9
14 Fancy goods.....	236	176
15 Machinery and apparata.....	437	89
16 Wheeled vehicles.....	192	104
17 Arms, powder and ammunition...	201	130
18 Wood and its manufactures.....	302	247
19 Paper, pasteboard and their applications.....	378	356
20 Leather goods.....	189	159
21 Drugs and chemical products.....	1,185	737
22 Sundries.....	1,321	996
	22,669	9,169
England.		
1 Duty free.....	2,050	,,
2 Cottons.....	2,768	3,602
3 Linen and flax.....	384	387
4 Woollens.....	364	400
5 Silks.....	29	21
6 Silks with mixtures.....	27	23
7 Food products.....	57	54
8 Stone and earth.....	1	,,
9 Glass and porcelain.....	16	29
10 Gold, silver and platinum.....	,,	,,
11 Iron, and steel.....	338	373
12 Copper and its alloys.....	67	50
13 Tin, lead and zinc.....	11	4
14 Fancy goods.....	25	12
15 Machines and apparata.....	3	1
Carried forward.....	6,160	4,956

	Value of imports in thousands.	Duties levied in dollars.
Brought forward.....	6,160	4,956
16 Wheeled vehicles.....	,,	,,
17 Arms, powder and ammunition...	7	2
18 Wood and its manufactures.....	7	4
19 Paper, pasteboard and its applications.....	33	28
20 Leather goods.....	10	6
21 Drugs and chemical products.....	89	52
22 Sundries.....	51	36
	6,338	5,084
France.		
1 Duty free.....	322	,,
2 Cottons.....	481	618
3 Linen and flax.....	65	68
4 Woollens.....	560	722
5 Silks.....	228	239
6 Silks with mixtures.....	269	288
7 Food products.....	1,144	750
8 Stone and earth.....	26	6
9 Glass and porcelain.....	160	166
10 Gold, silver and platinum.....	152	9
11 Iron and steel.....	107	85
12 Copper and its alloys.....	132	64
13 Tin, lead and zinc.....	15	7
14 Fancy goods.....	145	98
15 Machines and apparata.....	29	12
16 Wheeled vehicles.....	19	10
17 Arms, powder and ammunition....	1	5
18 Wood and its manufactures.....	40	26
19 Paper, pasteboard and their applications.....	229	149
20 Leather goods.....	141	84
21 Drugs and chemical products.....	269	128
22 Sundries.....	414	312
	4,956	3,846

Germany.

	Value of imports in thousands.	Duties levied in dollars.
1 Duty free	299	,,
2 Cottons	358	402
3 Linen and flax	121	104
4 Woollens	244	272
5 Silks	27	25
6 Silks with mixtures	44	45
7 Food products	160	131
8 Stone and earth	8	8
9 Glass and porcelain	164	206
10 Gold, silver and platinum	114	16
11 Iron and steel	228	214
12 Copper and its alloys	129	80
13 Tin, lead and zinc	27	18
14 Fancy goods	205	191
15 Machines and apparata	31	11
16 Wheeled vehicles	2	1
17 Arms, powder and ammunition	16	8
18 Wood and its manufactures	98	70
19 Paper, pasteboard and their applications	218	296
20 Leather goods	68	38
21 Drugs and chemical products	109	61
22 Sundries	173	111
	2,843	2,310

Spain.

1 Duty free	449	,,
2 Cottons	5	6
3 Linen and flax	2	1
4 Woollens	4	4
5 Silks	7	4
6 Silks with mixture	1	1
7 Food products	941	763
Carried forward	1,409	779

	Value of imports in thousands.	Duties levied in dollars.
Brought forward.....	1,409	779
8 Stone and earth.....	6	2
9 Glass and porcelain.....	3	2
10 Gold, silver and platinum.....	„	„
11 Iron and steel.....		
12 Copper and its alloys.....	2	2
13 Tin, lead and zinc.....		
14 Fancy goods.....	7	2
15 Machines and apparata.....	„	„
16 Wheeled vehicles.....	„	„
17 Arms, powder and ammunition...	41	21
18 Wood and its manufactures.....	1	1
19 Paper, pasteboard and their applications.....	291	216
20 Leather goods.....	1	1
21 Drugs and chemical products.....	15	5
22 Sundries.....	145	146
	1,921	1,177

Italy.

1 Duty free.....	10	„
2 Cottons, linen and flax, woollens, silks and silks with mixtures...	1	2
7 Food products.....	37	21
8 Stone and earth.....	12	9
Glass and porcelain, gold, silver and platinum, iron and steel, copper and its alloys.....	5	1
14 Fancy goods.....	17	8
Wheeled vehicles, wood and its manufactures.....	1	1
19 Paper, pasteboard and their applications.....	177	76
Carried forward.....	260	118

		Value of imports in thousands.	Duties levied in dollars.
	Brought forward.....	260	118
21	Drugs and chemical products.....	6	3
22	Sundries.....	4	1
		270	122
	Belgium.		
1	Duty free.....	51	„
2	Cottons.....	19	25
3	Linen and flax.....	20	23
4	Woollens	54	75
	Silk and silk with mixtures.....	1	1
7	Food products.....	8	21
8	Stone and earth.....	2	1
9	Glass and porcelain.....	8	11
10	Gold, silver and platinum.....	11	„
11	Iron and steel.....	18	17
	Copper, tin and zinc	1	1
14	Fancy goods.....	1	1
17	Arms.....	7	6
19	Paper, pasteboard and their applications.....	7	14
20	Leather goods.....	2	„
21	Drugs and chemical products.....	2	2
22	Sundries.....	35	34
		242	232
	Switzerland.		
1	Duty free.....	3	„
2	Cottons.....	54	37
	Linen and flax, woollens.....	3	2
5	Silks.....	12	11
6	Silks with mixtures.....	3	8
7	Food products.....	20	13
	Carried forward.....	95	66

		Value of imports in thousands.	Duties levied in dollars.
	Brought forward	95	66
	Gold, silver and platinum, iron and steel, copper	2	„
14	Fancy goods	13	5
15	Machinery and apparata	40	14
21	Drugs and chemical products	5	2
22	Sundries	2	2
		157	89

Austria.

1	Duty free	6	„
2	Cottons	5	6
	Linen and flax, woollens	8	2
	Silks and silk with mixtures	1	1
7	Food products	15	11
9	Glass and porcelain	18	11
11	Iron and steel	2	1
12	Copper and its alloys	3	2
14	Fancy goods	8	7
18	Wood and its manufactures	25	20
19	Paper, pasteboard and their applications	6	9
20	Leather goods	1	1
21	Drugs and chemical products	4	2
22	Sundries	4	2
		96	75

Ecuador.

7	Food products	85	37
22	Sundries	4	1
		89	38

Columbia.

		Value of imports in thousands.	Duties levied in dollars.
2	Cottons	6	7
7	Food products	67	24
22	Sundries	5	2
		78	33

Venezuela.

7	Food products	74	25

Holland.

1	Duty free	8	„
7	Food products	21	14
9	Glass and porcelain	3	6
	Other goods	2	1
22	Sundries	38	32
		72	53

Norway.

7	Food products	20	18
19	Paper, pasteboard and their applications	11	15
		31	33

India.

1	Duty Free	7	„
7	Food products	58	121
21	Drugs and chemical products	5	2
		70	123

China.

		Value of imports in thousands.	Duties levied in dollars.
5	Silks	19	8
6	Silks with mixtures	1	1
7	Food products	16	13
14	Fancy goods	2	4
22	Drugs, other goods and sundries	1	1
		39	27

Costa Rica.

7	Food products	22	6

Algiers.

7	Food products	9	15
21	Drugs and chemical products	5	1
		14	16

Guatemala.

1	Duty free	6	„
2	Cottons	1	1
	Sundries	4	2
		11	3

San Salvador.

2	Cottons	1	1
7	Food products	9	3
	Sundries	2	1
		12	5

Portugal.

7	Food products	9	3

	Value of imports in thousands.	Duties levied in dollars.
Turkey.		
Drugs, food products and fancy goods.....	2	1
Sweden.		
Iron and steel, glass, paper and drugs.....	2	2
The value of the goods proceeding from other countries such as Greece, Russia, Arabia, Persia, Japan, Zanzibar, Australia, Bolivia, Chile, Brazil, Perú, Argentine Republic, Uruguay and the Dominican Republic are insignificant in amount and their total as well as the duties levied on them can be estimated in the following thousands of dollars..	7	4

EXPORTATION.

The exportations for the same financial year of 1888 to 1889, through the different ports of the Republic, reach the sum of $60.158,423 as shown in the following tables:

CUSTOM HOUSES.	Precious metals.	Other articles.	TOTALS.
Matamoros.....$	182,083	276,584	458,667
Tampico.....	111,696	546,827	658,023
Tuxpan.....	.....	1.438,561	1.438,561
Veracruz.....	13.173,062	6.359,457	19.532,519
Coatzacoalcos.....	.....	87,834	87,834
Frontera.....	1,000	134,697	135,697
Isla del Carmen	.....	720,157	720,157
Campeche.....	4,000	120,129	124,129
Progreso.....	147,324	6.864,528	7.011,852
Exports through the Gulf ports..	13.619,165	16.548,274	30 167,439

China.

5 Silks.....
6 Silks with mixtures.....
7 Food products.....
14 Fancy goods.....
22 Drugs, other goods and sundries...

Costa Rica.

7 Food products.....

Algiers.

7 Food products.....
21 Drugs and chemical products.....

Guatemala.

1 Duty free .....
2 Cottons.....
Sundries.....

San Salvador.

2 Cottons.....
7 Food products.....
Sundries.....

Portugal.

7 Food products.....

		Value of imports in thousands.	Duties levied in dollars.
	Brought forward	16.851	5,214
9	Glass and porcelain	243	255
10	Gold, silver and platinum	37	3
11	Iron and steel	815	566
12	Copper and its alloys	261	128
13	Tin, lead and zinc	21	9
14	Fancy goods	236	176
15	Machinery and apparata	437	89
16	Wheeled vehicles	192	104
17	Arms, powder and ammunition	201	130
18	Wood and its manufactures	302	247
19	Paper, pasteboard and their applications	378	356
20	Leather goods	189	159
21	Drugs and chemical products	1,185	737
22	Sundries	1,321	996
		22,669	9,169
	England.		
1	Duty free	2,050	,,
2	Cottons	2,768	3,602
3	Linen and flax	384	387
4	Woollens	364	400
5	Silks	29	21
6	Silks with mixtures	27	23
7	Food products	57	54
8	Stone and earth	1	,,
9	Glass and porcelain	16	29
10	Gold, silver and platinum	,,	,,
11	Iron, and steel	338	373
12	Copper and its alloys	67	50
13	Tin, lead and zinc	11	4
14	Fancy goods	25	12
15	Machines and apparata	3	1
	Carried forward	6,160	4,956

Brought forward.....	496,383	23.647,920
Cattle.....	105,259	
Sundry animals.....	246	
Anis seed.....	162	
Indigo.....	2,950	
Rice.....	3	
Saffron.....	1,989	
Sugar.....	11,075	
Empty barrels.....	5,313	
„ bottles.....	999	
Coffee.....	3.430,788	
Lime.....	995	
Shoes.....	586	
Lobsters.....	120	
Sugar cane.....	600	
Coal.....	350,170	
Tortoise shell.....	100	
Fresh and salt meats.....	1,663	
Cascalote.....	3,156	
Rubber.....	111,576	
Barley.....	82	
White wax.....	20	
Horsehair.....	57,683	
Beer.....	1,303	
Copper.....	366,349	
Cocoa nuts.....	2,076	
Food products.....	5,553	
Pearl shells.....	25,095	
Shells of various classes.....	611	
Cork.....	40	
Tan bark.....	4,773	
Horns.....	173	
Asphaltum.....	1,800	
Carried forward.....	4.989,691	23.647,920

Brought forward	4.989,691	23.647,920
Chia seed	62	
Chicle	595,636	
Peppers	12,555	
Chocolate	1,165	
Damiana	2,426	
Manuscript documents	28,211	
Drugs	833	
Preserves	332	
Baggage	2,886	
Essence of Linoleum	2,370	
Spices	1,266	
Clay figures	1,002	
Photographs	628	
Beans	38,680	
Fruits	53,476	
Chick peas	729	
Gums and resins	241	
Guano	11,732	
Horse beans	20	
Wheat flour	1,391	
Henequen in fibre	6.670,225	
„ in cordage	160	
„ in hammocks	12,754	
Hay	120	
Bones	5,102	
Ixtle in hammocks	23	
„ in cordage	3,097	
„ in fibre	437,261	
Soap	124	
Toys and curiosities	1,854	
Bricks	1,771	
Wool	90,566	
Carried forward	12.968,389	23.647,920

Brought forward	12.968,389	23.647,920
Vegetables	2,263	
Firewood	6,975	
Printed books	9,720	
Lemons	54,029	
Native crockery	2,371	
Common wood	10,983	
Fine wood	301,243	
Moral wood	67,416	
Dye woods	144,897	
Corn	701	
Lard	15	
Butter	205	
Maps and plans	3,143	
Common marble	49,996	
Returned goods	40,814	
Talc	3,608	
Honey	61,789	
Copper ores	13,775	
Furniture	729	
Samples with or without value	263	
Objects of natural history	1,080	
Opals	249	
Orchilla weed	2,200	
Fodder	1,496	
Mats	266	
Sheep skins	5,474	
Tanned leather	661	
Goat skins	1.163,572	
Javalí skins	24,704	
Ox hides	597,060	
Deer skins	100,504	
Skins of other animals	9,438	
Carried forward	15.650,028	23.647,920

Brought forward	15.650,028	23.647,920
Unrefined sugar.....	4,796	
Oil paintings.....	1,307	
Live plants.....	4,200	
Plumbago.....	3,078	
Lead	466,691	
Feathers.....	1,331	
Pulque	315	
Jalap root.....	3,459	
Cheese	287	
Broom root.....	110,548	
Empty bags	459	
Salt.....	3,501	
Bran.....	830	
Cotton seed.....	3,175	
Sundry seeds.....	76	
Saddles.....	899	
Hats.....	6,394	
Tobacco worked.....	23,142	
„ leaf.....	28,297	
Rags..	344	
Wheat.....	1,360	
Vanilla.....	860,670	
Papers of value.....	2,084	
Native wines.....	3,128	
Medicinal herbs.....	1,141	
Zarzaparrilla.....	19,844	
Sundries.....	4,059	17.205,443
Total exports to United States...	.....$	40.853.363

ENGLAND.

Precious metals.

Silver ores	552,087	
Foreign gold coin	1,625	
Mexican gold coin	1,186	
Gold bullion	103,440	
Foreign silver coin	454	
Mexican „ „	8.272,796	
Silver slag	3,881	
Silver bullion	1.523,936	10.459,405

Merchandise.

Mezcal spirits	22	
Sundry animals	923	
Anis seed	50	
Indigo	2,325	
Sugar	29,577	
Empty bottles	10	
Coffee	158,796	
Tortoise shell	195	
Meat fresh and salt	541	
Rubber	2,580	
Copper	451,090	
Cocoa nuts	4,370	
Mother of pearl	130	
Tan bark	5,610	
Horns	40	
Asphaltum	400	
Drugs	45	
Baggage	200	
Figures of wax, clay, &c	458	
Carried forward	657,362	10.459,405

Brought forward	657,362	10.459,405
Beans	10	
Wheat flour	20	
Henequen cordage.....	149	
„ fibre	54,242	
Ixtle hammocks.....	80	
„ fibre.....	41,594	
Toys and curiosities	1,075	
Printed books.....	265	
Native crockery.....	200	
Moral wood	16,725	
Fine woods.....	355,167	
Dye woods	283,254	
Manufactures	644	
Furniture	20	
Samples	895	
Objects of natural history.....	585	
Orchilla weed.....	557	
Tanned skins.....	197	
Ox hides.....	3,248	
Skins of sundry animals.....	1,300	
Brown sugar.....	3,840	
Oil paintings.....	108	
Plants	6,900	
Jalap.....	1,599	
Broom root.....	23,578	
Empty bags	2,160	
Seeds.....	100	
Saddles.....	20	
Hats.....	200	
Tobacco worked	560,572	
„ leaf.....	10,153	
Vanilla.....	6,450	
Carried forward.....	2.026,369	10.459,405

Brought forward	2.026,369	10.459,405
Papers of value	28,325	
Native wine	30	
Sundries	7,240	
Goods returned	7,266	2.076,130
Total exports to England	....$	12.535,535

FRANCE.

Precious metals.

Silver ores	80,049	
Foreign gold coin	41	
Mexican „ „	23,668	
Gold bullion	85,890	
Foreign silver coin	1,288	
Mexican „ „	2.273,693	
Silver bullion	264,604	2.729,233

Merchandise.

Aguardiente	25	
Mezcal spirit	485	
Jewellry	4,850	
Asphaltum	240	
Sugar	151	
Coffee	153,865	
Horse hair	726	
Copper	150	
Cocoa nuts	140	
Provisions	82	
Shells of all classes	5	
Horns	2,595	
Asphaltum	70	
Carried forward	163,384	2.729,233

Brought forward.....	163,384	2.729,233
Chili peppers.....	49	
Chocolate.....	163	
Damiana.....	30	
Drugs.....	50	
Preserves.....	590	
Baggage.....	9,532	
Essence of linoleum.....	100	
Figures of wax, clay, &c.....	705	
Photographs.....	25	
Beans.....	40	
Chick peas.....	1,600	
Henequen fibre.....	27,190	
Ixtle hammocks.....	20	
„ fibre.....	25,047	
Toys and curiosities.....	970	
Printed books.....	622	
Native crockery.....	190	
Fine woods.....	29,703	
Moral wood.....	34,473	
Dye wood.....	18,636	
Corn.....	24	
Manufactures.....	2,202	
Maps and plans.....	40	
Common marble.....	1,135	
Goods returned.....	108	
Furniture.....	3,000	
Samples.....	96,519	
Objects of natural history.....	70	
Opals.....	100	
Goat skins.....	1,921	
Ox hides.....	21,571	
Deer skins.....	558	
Carried forward.....	440,367	2.729,233

Brought forward.....	440,367	2.729,233
Skins of sundry animals.....	870	
Brown sugar.....	235	
Oil paintings.....	765	
Plants.....	1,792	
Pulque.....	3	
Cheese.....	30	
Broom root.....	200,075	
Empty bags.....	10,660	
Bran.....	50	
Seeds.....	50	
Saddles.....	150	
Tobacco worked.....	22,827	
„ leaf.....	5,578	
Wheat.....	11,578	
Vanilla.....	55,956	
Native wine.....	24	
Zarzaparrilla.....	4,689	
Sundries.....	11,107	766,806
Total exports to France.....		3.496,039

GERMANY.

Precious metals.

Silver ores.....	1.006,384	
Foreign gold coin.....	994	
Gold bullion.....	105	
Mexican silver coin.....	1,766	
Silver slag.....	4,076	
Base bullion.....	3,500	
Silver „	9,691	
Silver sulphurets.....	255,289	1.281,805
Carried forward.....		1.281,805

Brought forward.....		1.281,805
Merchandise.		
Sundry oils.....	50	
Mezcal spirit.....	60	
Jewelery.....	3,975	
Indigo.....	2,375	
Sugar.....	12	
Coffee.....	112,133	
Tortoise shell.....	387	
Rubber.....	9,306	
Horse hair.....	330	
Copper.....	400	
Cocoa nuts.....	1,340	
Provisions.....	25	
Mother of pearl.....	422	
Pearl shells.....	6,290	
Shells of various classes	50	
Oil nuts.....	30	
Tan bark.....	150	
Horns.....	1,861	
Asphaltum	1,297	
Chili.....	100	
Preserves.....	310	
Baggage.....	7,465	
Figures of clay, wax and rag.....	1,045	
Beans	78	
Fruits.....	110	
Gums and resins.....	20	
Guano.....	23,630	
Henequen fibre.....	3,150	
Bones.....	680	
Ixtle fibre.....	86,886	
Carried forward.....	263,967	1.281,805

Brought forward.....	263,967	1.281,805
Soap.....	30	
Toys and curiosities.....	885	
Printed books.....	175	
Native crockery.....	488	
Fine woods.....	8,495	
Moral wood.....	15,338	
Dye woods.....	94,571	
Manufactures.....	1,053	
Common marble.....	600	
Goods returned.....	1,890	
Furniture.....	40	
Samples.....	132	
Objects of natural history.....	50	
Fine pearls.....	35,000	
Orchilla weed.....	9,778	
Cattle hoofs.....	150	
Tanned skins.....	20	
Goat skins.....	90	
Ox hides.....	50,015	
Deer skins.....	6,153	
Sundry skins.....	103	
Brown sugar.....	3	
Oil painting.....	125	
Plants.....	720	
Lead.....	1,047	
Pulque.....	6,475	
Broom root.....	134,462	
Seeds.....	15	
Tobacco worked.....	15,096	
„ leaf.....	125,181	
Wheat.....	130	
Vanilla.....	3,828	
Carried forward.....	776,105	1.281,805

Brought forward.....	776,105	1.281,805
Zarzaparrilla.....	3,192	
Sundries.....	460	779,757
Total exports to Germany.....		$ 2.061,562

SPAIN.

Precious metals.

Foreign gold coin.....	3,042	
Gold bullion.....	27,316	
Mexican silver coin.....	299,403	
Silver bullion.....	6,002	335,763

Merchandise.

Garlic.....	30,223	
Starch.....	1,840	
Bird seed.....	280	
Horses.....	1,700	
Indigo.....	338	
Peas.....	472	
Sugar.....	65	
Cocoa.....	231	
Coffee.....	8,192	
Tortoise shell.....	1,300	
Barley.....	650	
Horse hair.....	107	
Copper.....	140	
Provisions.....	20	
Shells of all classes.....	40	
Chili peppers.....	177	
Chocolate.....	40	
Preserves.....	316	
Carried forward.....	46,131	335,763

Brougdt forward.....	46,131	335,763
Baggage.....	4,730	
Figures of clay, wax and rag.....	40	
Photographs.....	50	
Beans.....	112,213	
Fruits.....	26	
Chick peas.....	25,373	
Guano.....	560	
Henequen cordage.....	40,851	
„ fibre.....	63,702	
Bones.....	978	
Ixtle fibre.....	10	
Toys and curiosities.....	5	
Vegetables.....	1,112	
Lentils.....	1,285	
Printed books.....	729	
Native crockery.....	20	
Common woods.....	30	
Dye woods.....	8,232	
Corn.....	15	
Manufactures.....	1,465	
Samples.....	195	
Tanned skins.....	5,990	
Ox hides.....	843	
Brown sugar.....	6	
Plants.....	23	
Powdered bark.....	209	
Cheese.....	56	
Broom root.....	3,387	
Bran.....	370	
Saddles.....	770	
Hats.....	3,150	
Tobacco leaf.....	11	
Carried forward.....	322,567	335,763

Brought forward.....	322,567	335,763
Papers of value.....	970	
Sundries.....	30	323,567
Total export to Spain.....		$ 659,330

GUATEMALA.

Precious metals.

Foreign silver coin.....	107,959	
Mexican „ „	145,137	253,096

Merchandise.

Mezcal spirit.....	20	
Rice.....	325	
Coffee.....	100	
Shoes.....	95	
Shrimps.....	5	
Chili peppers.....	5	
Baggage.....	100	
Beans.....	125	
Chick peas.....	5	
Wheat flour.....	200	
Ixtle cordage.....	100	
Soap.....	135	
Native crockery.....	10	
Corn.....	78	
Lard.....	305	
Manufactures.....	10	
Furniture.....	100	
Mats.....	25	
Cheese.....	55	
Salt.....	200	
Carried forward.....	1,998	253,096

Brought forward.....	1,998	253,096
Seeds.....	5	
Saddles.....	125	
Hats.....	15	
Tobacco worked.....	118	
„ leaf.....	27	2,288
Total exports to Guatemala.....		255,384

HOLLAND.

Merchandise.

Coffee.....	21,000	
Henequen fibre.....	150	
Toys and curiosities.....	500	
Dye woods.....	1,050	
Manufactures.....	100	
Samples.....	10	
Skins of animals.....	20	
Tobacco worked.....	832	
„ leaf.....	111,255	
Native wines.....	30	
Total exports to Holland.....		$ 134,947

COLUMBIA.

Precious metals.

Foreign gold coin.....	2,000	
Mexican „ „	2,500	
Foreign silver coin.....	2,280	
Mexican „ „	64,795	71,575
Carried forward.....	.....	71,775

Brought forward.....		71,575
Merchandise.		
Mezcal spirit.....	5	
Indigo.....	4,000	
Coffee.....	1,160	
Fresh meat.....	20	
Rubber.....	1,085	
Horse hair.....	39	
Samples.....	5	
Ox hides.....	15,788	
Deer skins.....	1,028	
Saddles.....	632	
Worked tobacco.....	4,660	28,422
Total exports to Columbia.....		$ 99,997

BELGIUM.

Merchandise.		
Barley.....	10	
Goods returned.....	20	
Samples.....	40	
Tobacco worked.....	150	
„ leaf.....	50,318	
Wheat.....	6	
Total export to Belgium.....		$ 50,544

NICARAGUA.

Precious metals.		
Foreign silver coin.....	4,609	
Mexican „ „	1,419	6,028
Carried forward.....	.....	6,028

Brought forward.....	.....	6,028
Merchandise.		
Mezcal spirit.....	75	
Rice.....	400	
Shoes...	15	
Spices.....	27	
Wheat flour.....	250	
Soap.....	20	788
Total exports to Nicaragua.....		6,816

COSTA RICA.

Merchandise.		
Fresh meat.....	220	
Salt.....	2,780	
Total export to Costa Rica.....		3,000

SAN SALVADOR.

Precious metals.		
Mexican silver coin.....	450	450
Merchandise.		
Mezcal spirit.....	385	
Goods returned.....	300	685
Total exports to San Salvador.....		1,135

ARGENTINE REPUBLIC.

Merchandise.		
Worked tobacco.....	520	520

VENEZUELA.

Merchandise.

Printed books.....	.....	200

ITALY.

Seeds.....	.....	$ 50

SUMMARY OF EXPORTS.

	Precious metals.	Merchandise.	TOTALS.
United States.....$	28.647,920	17.205,443	40.853,363
England	10.459,405	2.076,130	12.535,535
France.....	2.729,233	766,806	3.496,039
Germany.....	1.281,805	779,757	2.061,562
Spain.....	335,763	323,568	659,331
Guatemala	253,096	2,288	255,384
Holland	.....	134,947	134,947
Columbia.....	71,575	28,422	99,997
Belgium	.....	50,544	50,544
Nicaragua	6,028	788	6,816
Costa Rica	.....	3,000	3,000
San Salvador.....	450	685	1,135
Argentine Republic.....	.....	520	520
Venezuela	.....	200	200
Italy.....	.....	50	50
	88.785,275	21.373,148	60.158,423

The exports of the following financial year of 1890–1891, come to $ 63.276,395 as follows:

	Precious metals.	Merchandise.	TOTALS.
United States.....$	28.400,833	21.582,253	44.983,086
England	8.045,963	2.836,765	10.882,728
France.....	2.763,895	890,156	3.653,551
Germany.....	1.764,447	1.021,428	2.785,875
Spain.....	52,104	463,090	515,194
Carried forward.....	36.026,742	26.793,692	62.820,434

	Precius metals.	Merchandise.	TOTALS.
Brougth forward.....$	36.026,742	26.798,692	62.820,434
Guatemala	168,691	25,020	193,711
Holland	.....	187,932	187,932
Columbia.....	53,813	3,603	57,416
Nicaragua	4,993	1,297	6,290
San Salvador.....	2,133	2,502	4,635
Russia.....	.....	4,000	4,000
Italy	.....	920	920
China	.....	845	845
Costa Rica.....	.....	212	212
Total exportation .....$	36.256,372	27.020,023	63.276,395

VI

INDUSTRIES.

The organization of the Department of Fomento in the year 1853, inaugurated a new era for the developement of the country and the advancement of the national industries. Owing to the extensive repairs on wagon roads throughout the country, and the opening of new ones which facilitated conmunications between the principal towns of the Republic, trade became possible through channels which hitherto had been closed. The mining industry received a great impetus through the surveys which were made of the mineral districts, the reforms made in the Mining Ordinances, the regulation of the denouncements, possession and working of the mines, as well as the organization of the mining deputations and of practical schools of mining. The general industries of the country were greatly increased by a large number of factories in which yarns and cloth were manufactured both of cotton and wool, substituting modern machinery for the cumbersome and imperfect apparata which had been used up to that time. Commerce and agriculture were greatly stimulated by the establishment of special schools, whilst the knowledge of national geography took a great step by means of the formation of scientific commissions which undertook explorations of the more interesting parts of the country, in this way preparing it for the establishment of colonies by giving an exact knowledge of its formation and resources.

In spite of all these energetic efforts the want of public tranquility, as the result of many years of civil wars, opposed its natural resistence to the full developement of these improvements, initiated and placed in practice with the most patriotic intentions. The peace which the Republic now happily enjoys, without the least fear of any disturbance, has been fruitful in good results to the country which now begins to show the advantages of the same in its statistics of progress.

Besides the more important branches of agriculture and mining, many Mexicans find occupation in trade, in arts and in manufacturing industries of all kinds.

Both agriculture and mining provide the manufacturing industries with the raw material which they require, such as cotton, flax, numerous fibres extracted from different plants, amongst which we may mention ixtle and henequen, the hemp and ramie which are so abundently produced in the country, indigo, saffron, orchilla weed, and other lichens used for dyeing purposes, Campeche wood, Brazil vood and zacatlaxcale; cochineal, barks used in pharmacy and in the tanning of skins, such as oak, cascalote, campeche and huamuchil, zarzaparrilla and many other plants; woods for construction and for cabinet work, reaching in quality from the very finest such as mahogany, ebony, tapinceran, balsam, iron wood, walnut, cedar, cat wood, rosewood and many others, down to the commonest class such as oak, ash, oyamel, and many others of the numerous family of the conifera; oleaginous seeds and plants such as olives, sesame, linseed, peanut, chicalote, cocoanut, oil coco, walnut and castor bean; mucilaginous seeds such as chia; gums and resins such as copal, liquid amber, linoleum, mesquite and pine; animal and vegetable wax; sugar cane; different fruits for the preparation of liquors; animal and vegetable silk, skins, wool, mother of pearl and other shells, pearls and tortoise shell, different minerals, precious stones, rock crystal, building stone and very handsome marbles and

alabaster, amongst which we may mention the beautiful onyx from Tecali and other places.

The manufacturing industries include the making of cotton and woollen cloths, prints, the winding and weaving of silk, the manufacture of china and porcelain, both fine and common, of all kinds of articles of clay, of glass, paper and chemical substances, the manufacture of sugar, syrups and spirits from sugarcane, from fruits and from the maguey plant which produces mezcal and tequila, whilst in a very extensive region of the country it produces the fermented liquor known under the name of pulque. In Parras, Paso del Norte and other places excellent grapes are cultivated which produce very good wine; and in many other parts the quince yields good beer and wine. In other parts there are extensive manufactories of objects of tortoise shell, silver, mother of pearl, bone, henequen, wax, rag, clay and onyx; there are many flour mills and manufactories of starch from wheat and from yuca. In the towns we find carriage and furniture factories of all classes, tan yards and leather workers; cigar factories and hat factories on a large scale. The Mexicans also employ themselves in all the arts, being especially prominent in those of printing, bookbinding, cabinet making and carpentry, shoe making and carving in stone or wood.

The manufactoring industries of the country are represented by 93 cotton factories of different classes and 27 woollen factories in the following order:

COTTON FACTORIES.

Federal District.

Names of factories.	Situation	Number of operatives.	Annual production.			Value of production.
La Hormiga	San Angel	350	90,000	Pieces	domestic	$ 247,500
Magdalena	Contreras	400	120,000	„	„	330,000
Compañía Industrial	La Teja	200	70,000	„	„	210,000
La Victoria	La Viga	300	80,000	„	„	240,000
La Fama	Tlalpam	290	75,000	„	„	225,000
San Antonio	México	700	300,000	„	„	900,000

Coahuila.

Aurora	Saltillo	56	10,000	Pieces	domestic	27,500
Buena Fe	Monclova	.....	30,000	„	plain cloth	90,000
Dávila Hoyos	Villa Arteaga	56	10,000	„	imperial and dril	27,500
Esmeralda	Ramos Arispe	28	5,000	„	domestic	13,750
Estrella	Parras	600	150,000	„	white cloth	450,000
Hibernia	Saltillo	60	12,000	„	domestic	33,000
Libertad	„	70	15,000	„	„	41,250
Labrador	„	36	7,000	„	„	19,250

Chihuahua.

Talamantes	Chihuahua	220	20,000	Pieces	domestic	55,000

Colima.

Names of factories.	Situation.	Number of operatives.	Annual production.			Value of production.
Armonía	Colima	50	15,000	Pieces	domestic	$ 41,250
Atrevida	„	100	36,000	„	„	99,000

Durango.

Belem	Peñon Blanco	55	36,000	Pieces	domestic	99,000
Constancia	Nombre de Dios	60	12,000	„	„	33,000
Constancia	Mapimí	84	30,000	„	„ and drill	90,000
Providencia	Durango	70	8,000	„	„	22,000
El Salto	Nombre de Dios	60	12,000	„	„	33,000
El Tambor	Papasquiaro	55	6,000	„	„	16,500
El Tunal	Durango	250	12,000	„	„	33,000
Sin Nombre	Villa Lerdo	50	24,000	„	„	66,000

Guanajuato.

Batanes	.....	.....	12,000	Pieces	domestic	33,000
Americana	Leon	102	120,000	Yarn		.....
Providencia	Chamacuero	150	72,000	Pieces	domestic	198,000
Reforma	Salvatierra	150	68,000	„	„	187,000

Guerrero.

Perseverancia	Atoyac de Alvarez	100	24,000	Pieces	domestic	66,000

Hidalgo.

Names of factories.	Situation.	Number of operatives.		Annual production.	Value of production.
Maravilla		60	16,000	Pieces domestic	$ 44,000

Jalisco.

Cruz de Piedra					
Atemajac	Zapopan	170	60,000	Domestic, drill and yarn	210,000
Escoba	„	200	50,000	Domestic	137,000
Río Blanco	„		30,000	„	82,580
Experiencia	„			Yarn	
Victoria	Lagos		40,000	Pieces domestic	110,000

México.

Río Hondo	Tlalnepantla	40	40,000	Pieces domestic	110,000
Colmena	„	80	72,000	„ „	198,000
Miraflores	Chalco	86	76,000	„ „	209,000

Michoacan.

La Paz	Morelia	176	36,000	Pieces domestic	99,000
Providencia	Uruapan	150	30,000	„ „	82,500

Nuevo Leon.

Names of factories.	Situation.	Number of operatives.	Annual production.			Value of production.
Porvenir	Santiago	40	40,000	Pieces domestic		$ 110,000
La Leona	Garza García	70	20,000	,,	,,	55,000
Fama	Santa Catarina	100	20,000	,,	,,	55,000

Oaxaca.

Vista Hermosa	San Agustin Etla	200	24,000	Pieces domestic		66,000
San José	,, ,, ,,	250	40,000	,,	,,	110,000
Xica	Villa Juárez	250	48,000	,,	,,	132,000

Puebla.

Patriotismo	Puebla	460	10,000	Pieces domestic		27,500
			40,000	Kilograms yarn		
Constancia	,,	280	80,000	Pieces domestic		220,000
			10,000	Kilograms yarn		
Economía	,,	220	70,000	Pieces domestic		192,500
			40,000	Kilograms yarn		
Independencia	,,	95	50,000	Pieces domestic		137,500
			20,000	Kilograms yarn		
Molino de Enmedio	,,	190	70,000	Pieces domestic		192,500
Mayorazgo	,,	140	60,000	,,	,,	165,000

Puebla.

Names of factories.	Situation.	Number of operatives.	Annual production.			Value of production.
Guadalupe	Puebla	125	30,000	Pieces domestic	$	82,500
La Luz	,,	75	25,000	,, ,,		68,750
San Juan Amatlan	,,	150	60,000	,, ,,		165,000
Concepcion	,,	110	150,000	Prints		450,000
Carolina	Atlixco	240	96,000	Pieces domestic		264,000
Concepcion	,,	108	30,000	,, ,,		82,500
Santa Cruz	Cholula	160	70,000	,, ,,		192,500
Providencia	,,	120	60,000	,, ,,		165,000
Beneficencia	,,	130	60,000	,, ,,		165,000

Querétaro.

Hercules La Purísima San Antonio	La Cañada ,, ,,	1,000	170,000	Pieces domestic		467,000

San Luis Potosí.

El Venado	El Venado	400	50,000	Pieces domestic		137,500

Sinaloa.

Bahía		.....	9,600	Pieces domestic		26,400
Union		.....	60,000	,, ,,		165,000
Coloso	Culiacan	200	12,000	,, ,,		33,000

Sonora.

Names of factories.	Situation.	Number of operatives.	Annual production.			Value of production.
Industria Sonorense.....	Los Angeles.....	84	12,000	Pieces domestic.....	$	33,000

Tepic.

Jauja.....	Tepic.....	250	40,000	Pieces domestic.....		110,000
Bellavista.....	„	250	40,000	„ „		110,000
Santiago.....	Santiago.....	45	9,000	„ „		24,750
Fábrica del Rio.....	Tepic.....	42	10,000	„ „		27,500

Tlaxcala.

Alsacia.....	Zacatelco	160	15,000	Prints.....		450,000
El Valor.....	„	85	40,000	Pieces domestic.....		110,000
Tlaxcalteca.....	„	150	60,000	„ „		165,000
Josefina.....	„	200	120,000	„ „		330,000
San Manuel	Santa Cruz.....	200	120,000	„ „		330,000
Trinidad.....	„ „	226	90,000	„ „		247,000

Veracrus.

Cocolapan.....	Orizaba.....	450	80,000	Pieces domestic.....		220,000
San Lorenzo.....	Nogales.....	470	100,000	Prints.....		300,000
Cerritos.....	Orizaba.....	196	26,000	Pieces domestic.....		71,500
Industria Jalapeña	Jalapa	114	50,000	„ „		137,500
El Molino.....	„	120	35,000	„ „		96,250

Veracruz.

Names of factories.	Situation.	Number of operatives.	Annual production.			Value of production.
Probidad.....	Jalapa.....	85	25,000	Pieces domestic.....		$ 68,750
Lucas Martin.....	Banderilla.....	52	12,000	„	„	33,000
Purísima.....	Coatepec.....	5	12,000	„	„	33,000

Yucatan.

Constancia.....	Mérida.....	90	12,000	Pieces domestic.....		33,000

The cotton procedes from the fertile region which extends from Santa Rosalia in Chihuahua, to the Valley of the Nazas in Durango, from the Laguna District in Coahuila and from the coast, especially that of Veracruz, Oaxaca, Guerrero, Colima, and Jalisco. The entire consumption of cotton in the National factories can be estimated at 30.000,000 pounds (13.807,390 kilograms) per annum, the half of which is imported through Veracruz and the custom houses of the Northern Frontier. The average price of the cotton is 20 cents per pound.

WOOLLEN FACTORIES.

		Annual production.
La Minerva, Aguila, De Monnet	Federal District	162,000 pieces.
La Aurora, La Purísima, San Ignacio	Aguascalientes	.....
La Industria	Chihuahua	.....
La Constancia	Durango	.....
San Fernando, Zempoala	Guanajuato	100,000 pieces.
Esperanza, Santiago, Gayol, El Cármen, Angeles, San Luis	Hidalgo	125,000 „
San Ildefonso, Progreso, San Pedro, Zapayantla	México	150,000 „
Fronteriza	Nuevo Leon	20,000 „
San Felipe	San Luis Potosí	.....
Concepcion, San Gregorio, Real del Alto, Telaraña	Puebla	550,000 „
Zacatecana	Zacatecas	.....

These factories produce 1.200,000 pieces of very good kersimeres, counterpanes, serge, sarapes, blankets and other clothing.

PAPER FACTORIES.

Tapalpa and Atemajac, in Jalisco.
Cocolapan, in Veracruz.
Santa Teresa, Peña Pobre, Belem } In the Federal District.

The raw material used by these factories are rags, linseed straw, waste paper and cotton waste from the factories, the yearly consumption being estimated at 3.000,000 kilograms

with a value of $ 350,000. The half of this sum can be said to be received by the poor people in the lowest social grade. These paper factories produce common foolscap paper, printing paper of different sizes, colored papers, wrapping papers, and letter paper.

The principal glass factories are those of Apizaco and Texcoco, and those of china are situated in the City of Mexico.

The subjects of agriculture and mining are treated of in another chapter.

VII

PUBLIC INSTRUCTION.

This interesting department, which is the principal and most solid foundation of the prosperity of nations, has been most highly developed in Mexico through the impetus it daily receives from all the authorities who have anything to do with its management. Moved by a patriotic desire for the advancement of their country, they have done their best to perpetuate the memory of the present administration, by a special attention to public instruction and by opening the greatest number possible of public schools. Outside of the large cities the schools shed the light of civilization on the most isolated villages, excepting only those remote places on the frontier which are at times subject to the invasion of savage Indian tribes. Public and private establishments, libraries, museums and numerous periodical publications contribute to the diffusion of education among the people, giving it at the same time a great onward impetus which is greatly assisted by the authorities and by the numerous societies instituted in the Republic.

The primary instruction is principally taken charge of by the municipalities, although the Federal Government supports some schools either directly or by means of subsidies. Other schools, and not a few are under the care and protection of private individuals and charitable societies.

The principal studies carried on in the primary schools are: reading, writing, grammar, arithmetic, decimal system, princi-

pals of geography and universal history with that of Mexico in particular, and urbanity. Besides the above, the girls are taught all kinds of needle work both plain and fine, as well as embroidery. In most of the private establishments the course is extended to the superior primary instructions, and to different branches of the secondary and preparatory classes.

The greater part of the States of the Mexican Confederation have admitted the principal of obligatory and gratuitous instruction, either by imposing penalties, such as that of not being allowed to enter the public employment, on those fathers or guardians who are remiss in the fulfillment of this duty, or by establishing premiums which serve to stimulate the children to a punctual attendance at the schools.

The system of instruction which is most generally adopted is the mutual and simultaneous, but the objective instruction is also largely practised.

The number of schools established in the Republic and the number of pupils attending the same are shown in the following tables.

PUBLIC INSTRUCTION.

STATES.	GOVERNMENT SCHOOLS.			MUNICIPAL SCHOOLS.			TOTAL NUMBER OF SCHOOLS.	ATTENDANCE.		TOTAL.
	BOYS.	GIRLS.	Mixed.	BOYS.	GIRLS.	Mixed.		BOYS.	GIRLS.	
Aguascalientes	35	14	.....	.....	.....	.....	49	2,646	1,296	3,942
Campeche	32	18	.....	10	8	.....	68	1,630	800	2,430
Coahuila	1	.....	27	5	.....	78	106	3,606	1,965	5,571
Colima	20	20	2	1	.....	.....	43	1,140	1,300	2,440
Chiapas	5	1	.....	128	35	8	167	1,670	336	2,006
Chihuahua	2	.....	.....	134	37	12	185	7,284	1,853	9,137
Durango	75	36	4	13	2	.....	130	4,868	3,070	7,438
Guanajuato	83	69	.....	47	34	.....	233	9,937	7,059	16,996
Guerrero	408	45	14	.....	.....	.....	467	10,276	2,467	12,743
Hidalgo	484	201	6	.....	.....	.....	691	18,321	6,425	24,746
Jalisco	131	120	48	.....	.....	.....	299	9,444	9,531	18,975
México	1	.....	.....	854	178	.....	1,033	29,139	7,593	36,732
Michoacan	185	89	.....	.....	.....	.....	274	12,448	7,438	19,886
Morelos	50	51	121	.....	.....	.....	222	4,586	2,720	7,306
Nuevo Leon	4	.....	.....	221	53	.....	278	8,077	3,512	11,589
Oaxaca	399	74	.....	50	13	.....	536	16,766	3,594	20,360
Puebla	8	2	2	750	247	90	1,099	30,275	12,944	43,219
Querétaro	73	23	1	.....	.....	.....	97	3,316	1,871	46,87
San Luis Potosí	1	.....	.....	201	61	.....	263	10,434	4,059	14,493
Sinaloa	4	.....	.....	102	33	161	300	5,583	3,390	8,973
Sonora	125	39	4	.....	.....	.....	168	4,468	2,114	6,582
Tabasco	1	.....	.....	32	22	.....	55	2,094	1,235	3,329
Tamaulipas	2	.....	.....	93	41	.....	136	6,106	2,944	9,050
Tlaxcala	165	60	2	.....	.....	.....	226	7,036	2,762	6,798
Veracruz	352	108	89	.....	.....	.....	549	13,516	6,205	19,721
Yucatan	191	87	.....	30	19	1	328	7,861	3,582	11,443
Zacatecas	10	5	.....	344	163	149	671	12,107	7,409	19,516
Federa District	18	9	2	123	85	14	251	10,929	5,863	17,792
Territory of Lower California	13	8	5	1	1	.....	28	506	398	904
,, of Tepic	.....	.....	.....	62	29	.....	91	2,090	1,475	3,565
Totals	2,878	1,079	327	3,196	1,056	508	9,039	257,659	117,710	375,369

The following persons are employed in the public schools of the country:

5,737	Directors.
89	Sub–directors.
72	Prefects.
70	Monitors.
4,981	Professors.
1,169	Assistants.
35	Technical Assistants.
782	Employes and servants.
12,935	persons.

The total amount expended in salaries and general expenses of instruction by the Federal, State and municipal governments reaches the sum of $ 4.622,886.

The want of data does not allow us to include in this table the statistics of the numerous colleges opened by private people and charitable societies, and which would undoubtedly elevate the relative numbers of schools and pupils by at least 50 per cent over the figures given. The law of compulsory education which has been put in force in the Federal District and most of the States is already producing beneficial results, the attendance at the schools being such that the authorities find themselves under the necessity of opening new establishments with all the conditions demanded by modern pedagogy, several amongst these being normal schools for the training of teachers.

SECONDARY, SUPERIOR AND PROFESSIONAL INSTRUCTION.

The secondary instruction comprehends practical arithmetic, algebra and geometry, cosmography, universal geography and history, geography and history of Mexico, book–keeping, grammar, languages, drawing and music.

The superior and preparatory instruction for professional studies, embraces: mathematics, cosmography and geography

on an extended scale, physics, practical mechanics, mineralogy and geology, literature, chronology and general history, chemistry, natural history, morality and logic, the special history of Mexico, hygiene, education, music, history of philosophy, stenography, fencing, telegraphy, Latin, Greek, Spanish, French, English, German, Italian, Mexican or Nahuatl and drawing. In some establishments they teach languages of the country such as Mexican or Othomí.

There are also numerous establishments both in the Federal District and in the States, in which, besides the preparatory branches they give courses on the subjects required for the different professions, in accordance with all modern improvements, these colleges being fully supplied with the instruments necessary for the study of the sciences. Some of these special departments are extremely well fitted up, especially with cabinets of physics, chemistry and natural history, besides valuable museums and well stocked libraries.

The courses of instruction in the establishments of the capital which may be considered as typical of the others throughout the Republic, are:

School of jurisprudence, literature and eloquence.—Natural rights, Roman, National, constitutional, administrative, and maritime; penal legislation, civil and criminal proceedings, comparative legislation and agricultural mechanics, agricultural technology, hygiene, zootechnics, geology and hydrology, construction, topography, drainage and irrigation, political economy, rural legislation, microbiology, rural accounts and management, lineal, topographical and mechanical drawing, logic, agricultural chemistry, geography and cosmography, general and national history, external pathology of animals, materia medica, medical and veterinary legislation, comparative anatomy and physiology, practical veterinary medicine, Spanish, French, Greek and Latin Roots, music and drawing.

School of commerce and administration.—Arithmetic, mercantile correspondence, book-keeping and public accounts, gene-

ral and commercial geography, mercantile and maritime laws, administrative and constitutional laws, practical knowledge of native and foreign goods, commercial chemistry, Spanish, French, English, German, political economy, theory of credit, history and statistics of commerce, general laws, diplomatic customs and correspondence, mercantile caligraphy, general and national history, and constitutional law.

Industrial schools.—Arithmetic, algebra, geometry, trigonometry, natural, lineal, mechanical and ornamental drawing, modelling and carving in wood, Spanish grammar, physics and principles of mechanics, general and industrial chemistry, ceramics, quarrying, carpentry, blacksmithing, coopering, typography, lithography, photography, galvanoplastics, music and English and French languages.

Conservatories of music.—Theoretical music and principles of harmony, solfeo, choral singing, popular orpheon, counter point and composition, superior singing, piano, violin, viola, counter base, violoncello, harp, flute, clarionet, and reed instruments, oboe, trumpet, wind instruments in general, organ, theoretical and applied esthetics and history of music, biography of celebrated musicians, accoustics, medical legislation and political economy.

Schools of medicine.—Descriptive anatomy, theoretical and practical pharmacy, physiology, general and topograhpical anatomy, internal and external pathology, external and internal clinics, opthalmology, history of drugs, chemical analysis, dental diseases, obstetrics, medical legislation, normal, general and special histology, public and private hygiene, meteorology, general pathology, operatic medicine, therapeutics, bacteriology and pharmacy.

Schools of mining.—Mining, paleontology and geology; bridges, canals and harbor works, wagon roads and railroads, theoretical mechanics of construction, analytical chemistry, construction and erection of machinery, practical knowledge of materials, practical and industrial mechanics, hydrography

and meteorology, celestrial mechanics and astronomy, estatic graphics, analytical and applied mechanics, estereotomy and carpentry, mathematical physics and propable calculus, geodesy and practical astronomy, topography and hydromensuration, descriptive geometry, higher mathematics, electrical engineering, political economy, principles of architecture, architectural drawing, mechanical drawing, architectural designing and theoretical and practical topography.

Schools of arts.—Painting, sculpture, and ornamental modelling, pictorial landscape and perspective, engraving in general, drawing from nature and from models, crayon drawing, anatomy of forms, lineal and industrial drawing, architectural composition, clasic orders and copies of monuments, descriptive geometry and estereotomy, legal architecture, practical and applied mechanics, elements of mineralogy and geology and practical construction.

Schools of agriculture.—Mathematics, descriptive geometry, general physics and chemistry, mechanics, botany, zoology, surveying and phonography, chamber music, musical composition, Italian and French.

School for the blind.—Primary and secondary instruction, instrumental music, piano, rattan weaving, lace making and book binding.

Deaf and dumb school.—Language and labial articulation, geography, history, drawing, arithmetic, horticulture, lithography, needle work and embroidery, book-keeping, caligraphy, tailoring, shoemaking, artificial flower making, hat making, and dress making.

Military college.—Mathematics, geography, history, topography and topographical drawing, mechanics, physics, chemistry, geodesy, astronomy, architecture, estereotomy, road-making, canals and harbor works, natural history, military topography, superior algebra and infinitesimal calculus, analytical and descriptive geometry, infantry maneuvers, cavalry tactics, permanent and provisional fortifications, practical and

scientific artillery, fencing, swimming, gymnastics, French, English and German languages, natural and landscape drawing, military art and history, practical telegraphy and photography, military jurisprudence and belligerent rights, constitutional law, political economy, pilotage, naval artillery, and everything else relating to navigation. Besides the military college the Nation has a school ship in commission, and nautical schools established in Mazatlan and Campeche.

The Catholic clergy maintain scholastic establishments for the training of young men to the priesthood and to the practice of law, in which special courses are given on the same subjects as in the schools of jurisprudence, and besides; on morality, religion, sacred scriptures, eclesiastical history, dogmatic theology, moral theology, natural and canonical law, Latin classics, Latin grammar, sacred oratory and liturgy.

In Mexico City there is a female normal school, where they teach: mathematics, physics and principles of chemistry, Spanish, Cosmography, geography, history and chronology, comparative geography, history and geography of Mexico, telegraphy, galvanoplastics, writing, book-keeping, medicine and domestic economy, duties of women, hygiene and physiology, figure and ornamental drawing, French, English and Italian, hand work, pedagogy, music, singing, horticulture, gardening, elements of practical science, taxidermy, and political economy.

Annexed to this school is one for children and another for the perfection of primary instruction.

The Normal school for men gives instruction in the following branches: Spanish grammar and advanced reading, general and national geography and history, constitutional law and political economy, arithmetic, algebra and geometry, elements of mechanics, physics and chemistry, elements of natural history and object lessons, elements of physiology, domestic and school hygiene, cosmography, caligraphy and drawing,

gymnastics, military exercises, French and English, pedagogy, solfeo and coral singing.

There are in the country 16 secondary schools for girls, 16 preparatory schools for the professions, 19 special schools of jurisprudence, 26 seminaries for the study of law and the ecclesiastical career, 9 special schools of medicine, 8 special schools for the different branches of engineering, one practical school of mines, 31 institutes and lyceums, in which besides the preparatory studies, lectures are given on the subjects of law, medicine, pharmacy, engineering and commerce; 4 schools of fine arts, 2 special schools of theoretical and practical agriculture, 1 special school of commerce, 3 industrial schools for men and women, 3 conservatories of music, 1 school for the blind and 1 for the deaf and dumb, 1 military college, 2 nautical schools and several normal schools for male and female professors, the study of modern languages being general in nearly all the colleges.

LIBRARIES.

Besides the numerous libraries which are to be found in the Clubs, Departments of State, State Governments and private houses, the following exist in the Republic, either as public libraries or as annexes to scientific and literary societies.

Federal District.....	National Library, with a rich collection of manuscript documents, mostly referring to the history of Mexico.....	159,000
,, ,,	Of the Preparatory school.....	10,000
,, ,,	,, Commercial school.....	2,000
,, ,,	,, Law school.....	14,000
,, ,,	,, Fine Arts school.....	2,000
,, ,,	,, Engineering school.....	7,000
,, ,,	,, Agricultural school.....	4,000
,, ,,	,, Medical school.....	3,000
,, ,,	,, Museum, on Mexican History.	2,000

Federal District.....	Of the Geographical Society.....	4,000
„ „	„ General Archives.....	8,000
„ „	„ Judicial „	1,600
„ „	„ Normal school for men.....	400
„ „	„ „ „ „ women.....	400
„ „	„ Industrial school.....	2,117
„ „	„ Conservatory of Music.....	1,021
Aguascalientes.....	Public Library.....	2,136
„	Civil Institute Library.....	1,809
Lower California...	Municipal Library, La Paz.....	700
Campeche.....	Instituto Campechano.....	3,408
Coahuila.....	Public Library, Saltillo.....	2,102
Chiapas.....	Scientific Institute, San Cristobal.....	3,304
Chihuahua.....	Public Library.....	2,568
„	Literary Institute.....	1,690
„	College of San Francisco.....	497
Durango.....	Juárez Institute.....	5,000
Guanajuato.....	State College Library.....	12,500
Guerrero.....	Literary Institute, Chilpancingo.....	2,346
Hidalgo.....	Literary Institute, Pachuca.....	3,000
Jalisco.....	Public Library, Guadalajara.....	25,119
Michoacan.....	Public Library, Morelia.....	14,200
„	San Nicolas Library.....	3,681
„	Seminary Library.....	20,000
„	College of the Compañía, Pátzcuaro...	1,200
México.....	Tribunal of Justice, Toluca.....	126
„	Scientific and Literary Institute.....	10,258
„	Municipal Library, Mineral del Oro...	100
„	„ „ Lerma.....	100
„	„ „ Otumba.....	100
„	„ „ Jilotepec.....	100
Morelos.....	Public Library, Cuernavaca.....	1,855
Nuevo Leon.....	„ „ Monterrey.....	2,150
Oaxaca.....	„ „ Oaxaca.....	15,000
Puebla.....	Palafox Library, Puebla.....	27,000
„	Lafragua Library, Puebla.....	21,000
„	Serrano Library, Atlixco.....	200

Puebla.....	Benito Juárez Library, Zacatlan.....	400
„	Manuel Flores Library, Chalchicomula.....	350
„	Porfirio Diaz Library, Matamoros.....	500
Querétaro.....	Civil College Library.....	7,698
San Luis Potosí.....	Public Library.....	7,000
„ „	Municipal Library, Matehuala.....	1,000
Sonora.....	Public Library, Hermosillo.....	3,500
„	Sonora College, „	800
„	Educational Board, Guaymas.....	1,000
„	Society of Instruction, Zahuaripa.....	800
Tabasco.....	Juárez Institute, San Juan Bautista...	165
„	Cárdenas Library, „ „ ...	1,800
Tamaulipas.....	State Library, Ciudad Victoria.....	300
„	Juárez Society, Matamoros.....	500
„	Pedro Méndez Society.....	600
Tlaxcala.....	General Archives.....	327
Veracruz.....	Public Library, Veracruz.....	7,595
„	Popular Library, Tlacotalpan.....	512
„	Commercial School Library, Tlacotalpan.....	200
„	Preparatory College, Orizaba.....	9,092
„	„ „ Córdoba.....	375
„	Cuauhtemoc Library, Huatusco.....	300
Yucatan.....	Literary Institute, Mérida.....	320
„	Cepeda Library, „	1,404
„	Iturralde Library, Valladolid.....	280
Zacatecas.....	Public Library, Zacatecas.....	19,686
„	„ „ Fresnillo.....	1,190

The libraries in the Colleges are specially selected with a view to the particular class of education for which they are established and the same may be said of those which belong to scientific societies or corporations. The private libraries are very numerous, and amongst them are some which contain handsome and rare editions of valuable works, whilst others are noted for their rare manuscripts and valuable books on the archeology and history of Mexico.

The State Departments in the Capital of the Republic also possess very good libraries, with special reference to the branch of the public administration managed by each Department.

The general archives of the nation are contained in fourteen large rooms, and preserve a great number of documents and valuable manuscripts referring to the history of México. This important establishment is to México what the archives of Simancas are to Spain.

MUSEUMS.

The principal establishments of this class existing in the Republic, are:

In Mexico.—The National Museum of Antiquities and Natural History.

The Museum of Paintings, Sculpture, Engravings, Medals and Coins situated in the Academy of San Carlos. I will treat of these two museums more at length, in the portion of this book descriptive of the Capital.

The Museums of Zoology, Botany, Mineralogy, Paleontholo**gy**, of the Preparatory school and of the Technical school of Engineering, Agriculture and Medicine.

In Guadalajara.—Museum of Natural History, in the Scientific Institute or School of Engineering.

In Oaxaca.—Gallery of Ancient Paintings.

In Mérida.—The Archeological Museum of Yucatan.

In Morelia.—The Michoacan Museum of Antiquities and Natural History.

In Monterey.—The Cabínet Museum of Natural History.

In Puebla—Museum of Paintings, Natural History and Antiquities in the Academy of Fine Arts.

In Jalapa, Córdoba and Orizaba.—Special Museums of Natural History in the State Colleges.

The Museum of the State College in Coahuila.

The Museum of the State College in Chihuahua.

The Museums of Mineralogy and Natural History in the State College of Guanajuato.

The Public Museum at Chilpancingo, State of Guerrero.

The Museum of the Sonora College in Hermosillo.

OBSERVATORIES.

The Astronomical and Meteorogical Observatories of this country can be fairly considered as excellent establishments for scientific observation, being duly provided with the persons and instruments required for their proper administration.

The National Astronomical Observatory which was founded in Chapultepec has been permanently removed to a house in Tacubaya which was formerly a military college.

The Central Astronomical Observatory is established in México in the National Government Palace.

Besides these two principal observatories there is another one established in the Port of Mazatlan.

The Central Meteorological Observatory is also situated in the National Palace in México, and is in direct communication with the other observatories established in the greater part of the States of the Republic, as well as with the principal observatories abroad.

ASSOCIATIONS.

Besides the numerous Mutual Aid Societies which have been established in connection with important establishments of public education, with the object of maintaining and increasing primary schools, there are many others established throughout the Republic, dedicated to the study of the geography and history of the country, natural sciences, literature and fine arts; and the following is a list of them:

STATE.	SOCIETY.	Towns in which they are established.
Coahhuila.....	Literary «Manuel Acuña.»	Saltillo.
Cuihuahua.....	Pedagogic «Franklin».....	Chihuahua.
Guanajuato	Engineers.....	Guanajuato.

STATE.	SOCIETY.	Towns in which they are established.
Guanajuato	Medico–Fharmaceutical...	Guanajuato.
Jalisco.....	Medical.....	Guadalajara.
„	Engineers	„
„	Medico–Pharmaceutical...	„
„	Students	„
„	«Verea» Law Society.....	„
Nuevo Leon.....	Lawyers	Monterey.
„	Board of Health.....	„
„	Board of Education.....	„
Oaxaca.....	Medico–Pharmaceutical...	Oaxaca.
„	Lyceum «Ruiz de Alarcon»	„
„	Professors.....	„
San Luis Potosí.	Jatrodelfica.....	S. Luis Potosí.
„	Normal School.....	„
Sinaloa.....	Lancastrian Company.....	Mazatlan.
Tamaulipas.....	Literary «Manuel Navarrete».....	Ciudad Victoria.
Tepic	Lancastrian	Tepic.
Veracruz.....	«Sánchez Oropeza» Charitable.....	Orizaba.
Federal District..	Geographical and Statistical.....	México.
„	Natural History.....	„
„	Hidalgo Lyceum.....	„
„	Atheneum.....	„
„	Academy of Medicine.....	„
„	Spanish Academy.....	„
„	College of Lawyers.....	„
„	College of Engineers.....	„
„	Mineralogical	„
„	Agricultural	„
„	Veterinary and Agricultural.....	„
„	Filoiatrica.....	„

STATE.	SOCIETY.	Towns in which they are established.
Federal District..	Farmaceutical.....	México.
,,	Ex-pupils of the Mining School.....	,,
,,	Pedro Escobedo, Medical.	,,
,,	Antonio Alzate.....	,,
,,	Montes de Oca, Medico-Surgical.....	,,
,,	Literary, Morelos Lyceum	,,
,,	Literary, Mexican Lyceum	,,
,,	Mexican Agricultural.....	,,
,,	Gregorian.....	,,
,,	Seminarists.....	,,
,,	Pupils of Military College.	,,

JOURNALS AND PERIODICALS.

STATES.	Political and Literary.	SCIENTIFIC.	Commercial and Indust.	AGRICULTURAL.	LEGAL.	MEDICAL.	LITERARY.	PEDAGOGIC.	RELIGIOUS.	FOREIGN.	GENERAL.	MILITARY.	ARCHEOLOGICAL.	MINING.	MUSICAL.	TOTALS.
Aguascalientes	1	2	...	...	...	...	...	...	...	...	2	...	...	...	...	5
Lower California	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Campeche	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	3
Coahuila	1	1	1	...	...	...	...	...	1	...	...	...	...	...	...	4
Colima	1	1	...	...	1	...	2	...	...	...	...	...	...	...	...	5
Chiapas	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Chihuahua	7	...	1	...	...	...	...	...	1	...	1	...	...	...	...	10
Durango	2	...	...	...	...	...	2	...	2	...	1	...	...	...	...	7
Federal District	21	6	10	2	5	3	7	2	10	7	3	2	1	2	...	81
Guanajuato	2	...	3	...	1	...	4	...	1	...	...	...	...	...	...	11
Guerrero	2	...	...	...	...	...	1	...	...	...	1	...	...	...	...	4
Hidalgo	2	1	...	...	...	...	3	1	...	...	2	...	...	1	...	10
Jalisco	11	1	2	...	1	1	5	2	6	...	1	...	...	...	...	30
México	2	...	1	...	1	...	...	2	2	...	1	...	...	...	...	9
Michoacan	4	...	...	...	...	...	3	...	4	...	...	...	...	...	...	11
Morelos	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Nuevo Leon	3	...	1	...	...	...	2	...	1	...	...	...	...	...	...	7
Oaxaca	1	...	1	...	...	...	2	...	...	...	...	...	...	...	...	4
Puebla	4	2	2	...	...	...	3	...	...	...	1	...	...	...	...	12
Querétaro	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
San Luis Potosí	3	...	1	...	...	...	1	...	...	...	...	...	...	...	...	5
Sinoloa	3	...	1	...	...	...	3	1	1	...	2	...	...	...	...	11
Sonora	4	...	3	...	...	...	1	3	...	...	2	...	...	...	...	13
Tabasco	4	...	4	...	...	...	1	...	...	...	1	...	...	...	...	10
Tamaulipas	6	...	2	...	...	...	6	...	1	...	1	...	...	...	...	16
Tepic	2	...	1	...	...	...	...	...	...	...	1	...	...	...	...	4
Tlaxcala	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2
Veracruz	12	1	1	...	...	2	10	3	2	...	1	...	...	...	...	32
Yucatan	6	...	3	...	...	...	1	1	...	...	...	...	...	...	1	12
Zacatecas	3	...	...	...	...	...	1	...	1	...	1	...	...	...	...	6
Totals	114	15	38	2	9	7	58	15	33	7	23	2	1	3	1	328

Most of the political journals are also literary.

VIII.

ANIMAL KINGDOM.

In the Mexican Territory both the animal and vegetable kingdoms, are extensively represented throughout all the different regions, and from the interesting studies of the naturalists Herrera, Sánchez, Sumichrast and Duges, I have been able to form a table of the Mexican fauna in something like their due order.

MAMIFERA.

1st. Order: Primates, Two Species of Monkeys.

2nd. Order: Quiroptera, A numerous family of Bats and Vampires.

3rd. Order: Insectivora, Two species of Soricidæ of the genus Blarina Gray.

4th. Order: Carnivora, lion, coelot, tiger, small tiger, tamalayota, onnces or small lions, wolves, coyotes, foxes, mapaches, badgers, weazels, martens, bearded monkeys, comadrejas and otters.

5th. Order: Syrens, Manati.

6th. Order: Ungulados, Tapir, jabalies and deer.

7th. Order: Rodents. Squirrels, rats, mice of numerous species, moles, huitztlacuatzin, quauhtusas, tepeizcuintle, rabits and hares.

8th. Order: Edentados. Armadillos and honey bears.

9th. Order: Marsupials. Opossums and opossum rats.

The bison or buffalo range in large herds throughout the plains of the frontier states, where are also found numerous species of deer, beaver, besides black, grizzly and red bears.

Oil and sperm whales, seals and sea-lions, are found, the first on the western shores of California and the others in the Gulf of Cortés.

On the plains and slopes of the hot country, as well as on the extensive cattle ranges of the Southern States of the Republic, the business of cattle breeding has reached a high state of development, whilst between the 21° and 26° sheep breeding is found to be very succesful. The horses which are of the Andalusian breed, are of medium height but well proportioned, with great powers of endurance and full of life and vigor, whilst on some estates attention is paid to the breeding of other classes. The horned cattle are ordinarily bred on large ranches, from which they are brought to the markets for sale either as beef animals or as working stock. In the State of Morelos is found a particular breed of buffalo called "Caravaos" of great strength and endurance. Throughout the republic the breeding of stock in general is largely developed, the breeding of swine being very extensive in the States of Mexico and Jalisco.

BIRDS.

The birds of the hot country in this Republic are more distinguished for the beauty of their plumage, than for their song.

The red and green Macaws, the toucans, the parrots and parroquets, the common and royal pheasants fly in flocks filling the air with their shrieks, and reflecting in the light of the sum their beautiful and many colored plumage, at the same time that in the depths of the forest the melancholy song of the turtle dove calls to its mate. In the State of Chiapas we find the beautiful royal birds of Guatemala (quetzal), with their graceful crests, and feathery tails.

Within the territory of the Republic, we have four classes

of birds of prey; eagles, falcons, hawks, and owls of all sizes, and the gallinaceous family are very numerous, such as turkeys, pheasants, chachalacas, partridges, quails, and others of the same class.

Equally numerous are the birds of the crow family, magpies, swallows, carpenter birds, cuclillos, tucans, and king-fishers, whilst among the singing birds, we can mention the zenzontli, or mocking bird, the thursh, the solitary-bird, the mulatto, the trumpet-bird, the sparrow, the calandria, the linnet, and many others. The humming-bird, a beautiful small bird, with the most lively and variagated colors, constitutes one of the most numerous and richest class as well as the principal ornament to gardens and orchards.

In the lakes of the interior, we find a prodigious number of geese, gulls, ducks and storks, amongst which are the royal stork, water-hens, sand-pipers, as well as many others, which hide themselves amongst the vegetation on the borders of the lakes, and in the swamps. These birds afford plenty of sport and make delicate eating, and amongst them we find the tildios, wheat ears, wood-cocks, and snipe. Over the waves of the ocean on both coasts, we find a abundance of pelicans, gulls of all classes, and king-fishers.

REPTILES.

The turtle is found in different species on both coasts whilst in the interior of the country, the ponds and lakes abound in the common land-tortoise. In the territorial waters of Yucatan and California, as well as of the coast of Sinaloa, turtle are found with the handsome shell that is so much used for ornamental work.

Crocodiles abound in both seas, and especially in the mouths and estatuaries of rivers, on the banks of which they stretch themselves out to enjoy the heat of the sun, appearing like fallen trunks of trees to the incautious passer-by who is liable to be rudely informed of his mistake.

Alligators, iguannas, and lizards are also very numerous, as well as ophidians, amongst which are to be found boas, with a length of seven or eight meters, and many different kinds of snakes, some of them being venomous. Amongst these we may enumerate, the beetle–snake, the mazacoatl, the corral snake, and the rattlesnake, which is the most common; the rivers and irrigation ditches contain the inoffensive water–snake, and in some orchards and gardens, they even keep tame snakes, called cencoatl, with the object of keeping the grounds free from certain classes of rodents. There are also many other kinds of snakes in the country, such as the ribbon–snake, the sabanera, the alicant, some of which are very handsome for their bright colors, with metallic reflection, such as the *lepthophis mexicanus* and the *lep diplotrapis*.

Lastly, there are found in the country different species of chameleons.

BACTRACIA.

Of this family we find various species of toads, frogs, and the Mexican proteus, called axolotl.

FISHES.

These are extremely abundant in the Mexican waters, from the fiercest, such as word–fish, sharks of different kinds, and mantarraya, down to the most innoffensive and delicate, such as the pampano, huauchinango, lebrancha, curbina, esnegrigal, red and dark pargo in the Gulf of Mexico, soles, salmon, bopet, herring, hog–fish, horse–fish, robalo, flying–fish, bonito, and many others in the Pacific. In the rivers and lakes the fish are equally abundant, the principal being, cat–fish, mojarras, trout, and sardines. The larger lakes, such as Chapala, contain a great variety of these different kinds, besides a few more peculiar to themselves.

INSECTS.

The insects are as various as they are numerous, especially in the hot country, where they are most abundant in the exuberant vegetation, with which it is mostly covered. Amongst these we find the mosquitto, the horse-fly, the weevil, ants, wood-ticks, and many others which are a torment to man. This plague greatly diminishes in the temparate regions, and entirely disappears on the high table land. Amongst the insects a very important family is the cochineal *(coccus cacti)*, and the bee *(appis mellifera)*, on account of the excellent materials which they produce, and which are so useful to industries and commerce. The first of these is largely bred in Oaxaca, and gives a red coloring matter, which is applied very largely in the textile industry, and of the second there are found throughout the Republic, large hives which produce enormous quantities of wax and honey. Throughout the whole country the butterflies are to be seen flying in brilliant swarms, competing in beauty of form, and variety and splendor of color with the humming birds that are found in the gardens.

Amongst the innumerable number of insects which afford a rich field of study to the naturalist, are to be found the numerous order of coleoptera.

SPIDERS.

Of these there are different species found in the country, as well as of scorpions, the latter being most venomous in the hot country, and principally in the State of Durango.

CRUSTACEANS AND MOLLUSCS.

The members of these families which most abound are lobsters, crabs of different kinds, cray-fish, pearl and common oysters, of which rich beds are found on the coast of Califor-

nia, the first class extending as far South as the coast of Jalisco.

The existence of fossil moluscs in noticiable quantities in the interior of the country, is of great assistance to geologists in the clasification of the different strata. In his work on the Isthmus of Tehuantepec, Major Barnard, considers the existence on those coasts of the *aplisia depilans*, as certain, according to the following paragraph: "The existence of this animal, on account of its rareness, has been considered as fabulous by most naturalists; but there is no doubt that it does exist on the shores of the Pacific; there it is found in large swarms on rocky points, and the Indians employ it extensively in the manufacture of a species of twine which they call "caracol" from the local name of the animal. At low tide it is found adhering to the rocks, from which it is easily collected, and on blowing into the shell, the animal contracts itself and throws off an acrid liquor, excessively foetid, with which the Indians stain their hanks of thread, washing them afterwards with water and soap, and obtaining a permanent purple color." According to this author, this molusc, which the Indians use, is the same that was anciently called *lepus marinus*, from which the famous Tyrian purple was extracted.

The territory of the Republic affords such a vast field of study, with respect to its fauna, that it is imposible to do it justice or treat it as extensively as it deserves in a work of this class.

IX

AGRICULTURE.

CLIMATE AND PRODUCTIONS

The Northern part of the Mexican territory is included in the Temperate Zone, whilst the Southern part is in the Torrid Zone. These two general divisions that determine the average distribution of temperature, combined with the different altitudes of the ground, contribute to the diversity of climates which are found in the country, and in the three extensive regions which are known under the names of hot, temperate and cold country. The respective limits of these regions cannot be determined in a precise and exact manner, as the transition from one to the other is hardly felt, either in degrees of heat, or in the vegetation of the country.

From the coast up to an elevation of about 1,000 metres, the highest temperature is about 30° to 31° C., and the vegetation is entirely tropical indicating the Torrid Zone. These lands are excessively fertile and productive, on account of the constant humidity which is caused by the abundance of water and the continual dews, but on the other hand, these same elements of richness, contribute with the hot climate and other local circumstances, to the unhealthiness of these districts.

The N. E and S. W. winds on the western coasts and the heavy Northers which blow on the eastern coasts from Octo-

ber to March, modify the temperature, and lower the thermometer down to 22° C., and even more, during the time that these winds prevail. The unhealthiness of this zone is always increased in those places which are well sheltered from the prevailing winds, and in the neigborhood of swamps. On the slopes of the mountains, and at an elevation of 1,000 to 1,600 metres, the country enjoys a perpetual spring, the changes in temperature not exceeding 4° to 5°, the mean temperature of this zone being 23° to 25° C. In this privileged region, the extremes of cold and heat are unknown, as can be observed in Jalapa and Huatusco in the state of Veracruz, in Chilpancingo of the State of Guerrero, in Ameca, Jalisco, and in many other places which could be mentioned for the mildness of their climate, and their extreme salubrity. It frequently happens, that the clouds, floated along by the winds, and detained by the crests of the mountains cover these districts with heavy fog.

This privileged zone does not present the difficulties to the acclimatation of the European that are found in the first mentioned zone, because on both coasts, it is situated above the limit of the endemic diseases which are found in both, whilst it offers to the intelligent and hardworking agriculturist or manufacturer, all the elements he could desire for prosperous undertakings.

The third zone embraces all those lands which lie at an elevation of more than 1,600 meters over the sea, and includes a very large proportion of the great central table-land, whose mean temperature throughout the year is from 15° to 17°, with the exception of those places, where deep depressions and valleys exist, in which the temperature is higher and the vegetation acquires the vigor and exuberance, which clearly belong to the hot country, affording examples of the strange circumstance that can frequently be observed in Mexico, of a person passing during a journey of a few hours from one climate to another, and from one class of vegetable productions to another.

In the elevated valleys such as those of Toluca and Mexico, the depression of the mercury often shows a great lowering in the temperature, even as far as below zero, during winter when frosts are frequent, but as a general thing the winters are mild and the mean temperature is from 13° to 14° C.

I have above indicated the circumstances that have a direct influence on the remarkable difference in climate between the three zones above mentioned. The cold that is felt on the elevated mountains and in a less degree on the high table lands, even when it is not to be compared with the extreme cold of Siberia, is very different to the delicious climate which is hardly altered by the summer heats and winter colds of the Temperate Zone, and which is in still greater contrast with that of the coasts, always burning and at times suffocating. This climate on the other hand, although excessively hot, is very far from being comparable to that of Senegal or other parts of Central Africa.

Such are the general divisions of climate in this country, deduced from their own nature and without taking into consideration those of other countries.

In this manner, and speaking only of what is observed within the country, the hot zone includes: The Peninsula of Yucatan and Tabasco, as well as Veracruz, and Tamaulipas on the coast, the limits of this zone being Fortin to the West of Cordoba, the Encero, on the road from Jalapa to Veracruz, and Santa Barbara, in Tamaulipas. On the Pacific Coast, the same zone includes the territory of Lower California in which the highest peaks of the mountains de not reach above 1,000 meters, the districts of Altar, Magdalena, Hermosillo, Guaymas and Alamos, in Sonora; the western parts of Sinaloa and Jalisco, stretching inland through the great valleys of the Rivers Marqués, Tacámbaro, Zitácuaro, Cutzamala, Tepecoacuilco, Tenango and its branches, the Amacusac and others, all of which take their origin in the mountains in Michoacan; Mexico, Federal District and Puebla, on the Central Table land. The

Southern portions of all these States, and the entire State of Morelos, both on account of their lower altitude and of their southern aspect, belong to the Torrid Zone, which is interrupted by the Sierra Madre, traversing the States of Guerrero and Michoacan, as well as by other mountain ranges in the interior, which, elevating certain districts, places them in the Temperate Region, as can be observed in Chilpancingo and Tasco. The Torrid Zone also extends over the Mixteca country, the coasts and the valleys which traverse the southern portions of the States of Oaxaca and Chiapas.

The central table land, which is almost entirely in the cold zone, includes the plains in the northern part of the States of Michoacan and Mexico, the Federal District, the north and eastern parts of Puebla, the plains of Perote, and the States of Tlaxcala, Hidalgo, Querétaro and Guanajuato, the part of Jalisco adjoining the last named State, San Luis Potosí, with the exception of the eastern part, Aguascalientes, Zacatecas, except the Southern part, which includes the valleys of Juchipila and Tlaltenango, and lastly, the plains of Durango, which extend into the western part of Chihuahua.

This zone, which is also interrupted in numerous places by the depressions of the ground, is bounded by the great Cordilleras of the *Sierra Madre*, the crest of which forming the brow of the central tableland, is in many places crossable through great passes which are situated at an elevation more or less of 1,400 metres above the sea-level. We find examples of this in Boca del Monte, the pass by which the Mexican Railway climbs to the table-land; in Barranca Honda, on the railroad from Jalapa to Perote; in the pass of Oyameles, on the road from Teziutlán to Huamantla, and in El Salto, on the way from Mazatlan to Durango.

The zone which is intermediate betweent hose above described, is the Temperate, and mostly includes the slopes of the Sierra Madre towards either coast, extending itself over the plains of Chiapas, the northern part of Oaxaca, the Tuxtla and

Zongolica districts in Veracruz, and in the interior of the country over the valleys of Zacatlán, Huachinango, Rio Grande or Guadalupe in Hidalgo, the centre of Jalisco, the valley of the river Nieves in Zacatecas, the Nazas valley in Durango, the plains of Chihuahua, Coahuila and Nuevo León that slope gently towards the bed of the Rio Bravo, and lastly over all those low and sheltered districts which extend from the borders of these valleys and are covered with cereals.

The changes of the seasons are not so much felt in the places within the Torrid Zone, as in those that are outside of it; so much so that, the first named has only two real seasons which can be called the dry and the rainy season.

During the Summer, the most abundant rains refresh the ground, and this is another cause for the modification of the climate that generally would be expected in the geographical position of this Republic. The tropical rains commence in June, acquire their greatest intensity in July, and in the autumn equinox of September, and finally terminate at the begining of November, when the dry season begins. During the rainy season, the cumulus clouds appear on the horizon, with a brilliant white reflection, and of collossal proportions. These enormous masses of floating vapor generally unite after mid-day, and changing their character into that of nimbus clouds, precipitate themselves in heavy rainfalls which convert the streams into torrents, and cause the larger rivers to overflow their banks. The rapid play of lightning, and the thunder at frequent intervals in the clouds announce a fall of hail, accompanied generally with a fierce tempest. The water-spouts, whose mere presence threatens devastation, rapidly cross the atmosphere, and the hurricane which throws off continuous and deafening discharges of electricity makes one of these tropical rainstorms a sight fearful to man. Once the tempest has passed, the sky reappears beautiful and serene, the atmosphere being extremely limpid and transparent. The mornings are very beautiful, and were it not understood that they are

the precursors of the storms as above described, nobody would see the threat that they contain.

Under the influence of its varied climes, the vegetable products of the Republic have a variety unknown to other countries. From the intensely hot coasts of the ocean nearly up to the snows that crown the mountain peaks, the country presents with very few exceptions, a fertile and varied surface, developing in its three zones the most exuberant vegetation.

In the hot region, the country between the coast and the foot of the Cordillera, consist mostly of what are called *sabanas*, which are grazing grounds of more or less extent, with excellent pasture, varied by groups of trees amongst which predominate the ficus, the begonias, and the terebinto, whilst in many other places are found isolated groups of gigantic bamboos forming beautiful arches, which relieve the monotony of the plain.

Rising above these pasture lands to a height of 1,000 meters, above the sea level, we find that the vegetation has acquired a richness and development proper to these regions. The woods and forests are full of trees, highly esteemed for their fine woods, or for their dyeing qualities, whilst others are valuable for their fruits or medicinal properties; numerous herbs and parasitic plans interlace in the branches of the larger trees, and give a beauty to the scene difficult to describe.

Throughout these forests we find the following trees: Mahogony *(Swietenia)*, Tron-wood *(Robinia)*, Seibas *(Eriodendron Anfractusum)*, the Bombax Ceiba or Tepeguaje *(Acacia Acapulcensis)*, Ebony *(Dyospiros Ebenum)*, Taray *(Varennea Polystachia)*, Veracruz Copal *(Heliocarpus Americano)*, Copal Chino *(Amyris Bipinnata)*, Mulatto Wood *(Zantoxilon Clava-herculi)*, Oak *(Quercus?)*, Arrayan *(Myrtus arrayan)*, Guaco *(Aristolochia Grandiflora)*, Cascalote *(Cœsalpinia Cacalaco)* Mangle *(Rhisophora Mangle)*, Linoleum *(Anyris Lignaloe)*, Cuauteco-

mate *(Cresentia alata)*, Cedars *(Cedrela Odorata)*, Brasil Wood *(Cæsalpinia Echinata)*, Campeachy Wood *(Hæmatoxylon Campechianum)*, Dragon's Blood *(Pterocarpus Draco)*, Golden Hairs *(Carolina Fastuosa)*, Blue Wood *(Hæmatoxylon)*, Magnolias, amongst which are found the Mexican species or Yoloxochitl, Mimosas, and many other trees and plants too numerous to mention.

The rubber tree *(Castilloa Elastica)*, and the Anacahuita *(Cordia Boissieri)*, have to-day acquired a very great importance, the first for the application of its gum to so many branches of industry, and the second for its medicinal properties.

Amongst the fruit bearing trees and plants, the following may be enumerated:

The Mamey *(Lucuma Bomplandi)*, Chico zapote *(Achras Zapota)*, Zapote prieto *(Diospyros Obtusifolius)*, Zapote borracho *(Lucuma Salicifolia)*; oranges, limes, citrons and lemons; coco palms *(Cocos nucifera)*, date palms *(Phenix dactylifera)*, coyol palms *(Cocos Guacuyule)*, and the Oil coco *(Elais melanococca)*, which abounds in the coasts of Colima, and Guerrero; Guavas *(Psidium Pyriferum)*, Jinicuiles *(Inga jinicuyle)*, Cherries *(Spondia purpurea)*, Sour cherries *(Spondin nombin)*, and Bromelia, amongst which are found the Pine-apple *(Bromelia anana)*, Chirimoya *(Anona chirimoya)*, the Alligator pear *(Persea gratissima)*, Tamarind *(Tamarindus Occidentalis)*; different kinds of the *Musa genus*, such as the long Plantain *(Musa paradisiaca)*, the Guinea plantain *(Musa sapientum)*, the Dominican or Costa Rica plantain *(Musa regia)*, The China or Manilla red plantain *(Musa coccinea)*, and lastly the common mangle *(Mangifera indica)*, and the so-called Manilla Mangle Melons *(Cucumis melo)*, and Water-melons *(Cucurbita citrullus)*.

The vanilla *(Epeidendrum Vainilla)*, grows wild, but that which is cultivated in the districts of Papantla, Mizantla and Jalacingo in the State of Veracruz is of the very best class. Its cultivation costs little in either work or expense, but its manimulation and preparation are very difficult, although well recompensed by the returns.

The annual products are:

Chiapas.....	2,000	beans, value	$ 25 00
Jalisco.....	9,000	„	227 00
Oaxaca.....	462,000	„	4,587 00
Puebla.....	228,000	„	3,210 00
Veracruz.....	10,055	„	399,250 00
Total.....	711,055	„	$ 407,299 00

The production of this precious plant is much greater than that indicated in the above data, and can be fairly estimated according to other and more reliable reports, at two million eight hundred thousand beans, worth one million dollars.

Jalap root [*Ipomea and Convolvulus Jalapa*] also grows wild and is found very abundantly in the State of Veracruz. It is largely exported to Germany, United States, France and England.

Sugar cane [*Saccarum Officinarum*]. This is abundantly cultivated throughout the entire hot region, and in a large part of the Temperate, especially in the State of Morelos. There is an extensive region which has become noted as being the principal producer of this valuable plant, extending from East to West, and including the State of Colima, the Southern part of Jalisco, Michoacan, México and Puebla, the State of Morelos, and part of Guerrero, the States of Veracruz, Oaxaca Tabasco, Chiapas, Campeche and Yucatan; the State of Morelos being more or less in the center of this sugar-producing

zone. The cultivation of the sugar-cane was first introduced by Cortés shortly after the completion of the conquest, the first trials being made in the Tuxtlas of the Veracruz coast, and afterwards on his own properties in what is now the State of Morelos.

The annual products of this crop throughout the country are as follows.

WHITE SUGAR.

	Kilograms.		Value.
Campeche	690,680	$	108,025
Chiapas	336,856		54,627
Colima	362,445		62,625
Guerrero	871,019		208,150
Hidalgo	3,452		750
Jalisco	5.475,225		916,163
México	239,329		41,800
Michoacán	5.601,242		797,500
Morelos	15.376,885		2.341,550
Nuevo Leon	110,460		17,394
Oaxaca	1.403,996		296,510
Puebla	3.689,953		496,510
Querétaro	25,889		4,500
San Luis Potosí	659.535		125,460
Sinaloa	632,841		150,000
Tabasco	1.098,888		161,875
Tamaulipas	23,012		4,000
Tepic	698,923		136,525
Veracruz	2.112,099		340,900
Yucatan	1.632,740		210,208
	41.045,469		$ 6.471,232

COARSE BROWN SUGAR (PANOCHA).

Aguascalientes	2,761	$	160
Lower California	1.536,768		109,603
Campeche	289,381		17,262
Carried forward	1.828,910		127,025

	Kilograms.	Value.
Brought forward.....	1.828,910	127,025
Chiapas.....	1.847,606	140,874
Chihuahua.....	241,261	39,907
Coahuila.....	1.564,843	136,000
Colima.....	138,650	2,730
Durango.....	342,091	45,290
Guanajuato.....	541,482	41,500
Guerrero.....	1.873,533	109,090
Hidalgo.....	1.436,916	119,601
Jalisco.....	3.416,076	225,975
México.....	953,705	62,779
Michoacan.....	8.955,128	519,427
Morelos.....	381,545	34,175
Nuevo Leon.....	6.035,256	388,012
Oaxaca.....	1.847,874	111,934
Puebla.....	4.893,121	283,579
San Luis Potosí.....	5.260,405	322,178
Sinaloa.....	2.039,243	148,247
Sonora.....	1.970,690	233,250
Tabasco.....	279,601	30,700
Tamaulipas.....	3.102,762	111,855
Tepic.....	382,006	32,550
Veracruz.....	7.834,438	543,334
Yucatan.....	3.733,474	299,126
Zacatecas.....	2.091,827	151,494
	62.992,438	$ 4.260,632

SPIRITS.

Campeche.....	5,950	$ 66,100
Chiapas.....	21,525	292,975
Colima.....	1,163	16,800
Guanajuato.....	2,713	31,300
Guerrero.....	2,888	40,480
Hidalgo.....	5,378	47,792
Carried forward.....	39,617	495,417

	Kilograms.	Value.
Brought forwerd.....	77,778	88,880
Jalisco.....	6,635	95,600
México.....	5,352	78,845
Michoacan.....	27,561	384,220
Morelos.....	41,731	727,122
Nuevo Leon.....	622	2,790
Oaxaca.....	7,898	118,974
Puebla.....	27,805	417,060
Querétaro.....	1,105	16,808
San Luis Potosí.....	7,176	93,016
Sinaloa.....	212	5,000
Sonora.....	241	6,180
Tabasco.....	26,352	161,365
Tamaulipas.....	5,204	54,160
Tepic.....	356	3,640
Tlaxcala.....	3,598	47,680
Veracruz.....	52,818	770,725
Yucatan.....	42,292	561,240
Zacatecas.....	48	640
	296,623	$ 4.057,512
Total value of sugar cane products.....		$ 14.789,376

Coffee [*Coffea Arabica*] is produced throughout the Torrid Zone of the Republic. Forty years ago, the cultivation of coffee was limited to the District of Cuernavaca of the State of Morelos and the neighborhood of Córdoba in that of Veracruz. Since that time the plant has been extensively propagated in other parts of the country and the cultivation has been highly developed, until now this berry forms one of most important productions in many States of the Republic, as can be seen from the following table of production.

	Kilógrams.	Value.
Veracruz	12.500,000	$ 5.900,000
Oaxaca	2.000,000	800,000
Chiapas	1.300,000	520,000
Puebla	1.200,000	360,000
San Luis Potosí	600,000	180,000
Michoacan	500,000	200,000
Colima	450,000	170,000
Morelos	200,000	80,000
Tabasco	200,000	80,000
México	150,000	45,000
Hidalgo	125,000	37,500
Tepic	76,000	22,800
Jalisco	53,000	15,900
Guerrero	10,000	4,200
Querétaro	5,000	1,500
	19.369,000	$ 7.516,900

The most celebrated coffee is that which is cultivated in the neighborhood of Córdoba, that of Villa Alta in Oaxaca, that from Uruapan and Apatzingan in Michoacan, that from Colima and from Morelos.

Tobacco [*Nicotiana Tabacum*]. An excelent quality of this plant is cultivated in the hot country. During the time of the colonial government of Spain, and the first years of Mexican independence, the cultivation of tobacco was limited to one district in the State of Veracruz, from which the Government received the crop, of which it had the exclusive sale. This inconvenient proceding lasted until the National Government raised the monopoly of tobacco, since which date the freedom of cultivation and sale of this important plant developed the industry and allowed the cultivators the splendid profits that they now make. As before stated, tobacco is cultivated all through the hot country, but the districts that have acquired the highest reputation for the excellent class of their products are the Tuxtlas, Valle Nacional, Tlapacoyan, Huimanguillo,

Campeche and Simojovel on the Atlantic coast, Tepic and Compostela on the Pacific coast.

The following table shows the annual production.

	Kilograms.		Value.
Lower California	20,711	$	5,177
Campeche	4,602		1,150
Chiapas	107,907		43,163
Chihuahua	164,389		65,756
Colima	25,314		10,000
Durango	63,965		25,586
Guanajuato	236,360		94,544
Guerrero	155,908		21,450
Hidalgo	30,158		6,030
Jalisco	437,520		109,380
México	9,366		3,450
Michoacan	237,022		29,255
Nuevo Leon	12,657		3,164
Oaxaca	557,057		272,235
Puebla	226,787		56,697
Querétaro	28,765		6,000
San Luis Potosí	48,441		12,810
Sinaloa	62,305		15,000
Sonora	401,335		80,334
Tabasco	125,130		82,216
Tepic	372,741		93,190
Veracruz	2.325,620		930,248
Yucatan	24,379		7,065
Zacatecas	33,529		6.015
	5.711,968	$	1.979,915

In this table, as in most of the same class, the value given represents the price at which the cultivator sells, without showing the different classes of tobaccos, or the value which they acquire after being selected and separated. In some cases, the value of the arroba (11.5 kilograms) of the superior classes from the Valle Nacional, reaches forty dollars, and the second

class twenty-five dollars, those of Tuxtla being twenty two dollars and ten dollars.

Rice [*Oriza sativa*] is cultivated in the hot and damp regions of the country, ripening about six or seven months after being sown. It multiplies at the rate of forty or fifty to one. The principal producers of this crop are the States of Colima and Morelos.

Its annual production is as follows:

	Kilograms.		Value.
Campeche	218,605	$	25,230
Chiapas	981,249		46,062
Colima	2.541,746		136,083
Guerrero	583,907		60,168
Hidalgo	23,318		2,030
Jalisco	237,718		16,828
Michoacan	250,605		98,916
Morelos	2.366,595		172,932
Oaxaca	174,373		17,484
Puebla	484,756		43,413
San Luis Potosí	56,380		3,950
Sinaloa	34,519		4,875
Tabasco	573,019		56,338
Tamaulipas	598,322		50,000
Tepic	682,087		63,480
Veracruz	886,971		80,424
Total	10.694,170	$	878,213

Cotton [*Gossypium*]. This textile gives a large crop of good class on the coasts, and is largely cultivated with the best results in Sonora, Sinaloa, Guerrero, Yucatan, Oaxaca, Jalisco, Michoacan and Veracruz; but the region which can be pointed to as the principal producer of this useful crop is that which extends from Santa Rosalía and Rio Florido in Chihuahua, to the districts of Viezca, Parras and Monclova in Coahuila, including the fertile valley of the Nazas in the State of Durango.

The annual production of cotton is shown in the following table.

	Kilograms.	Value.
Lower California	110,057	$ 8,369
Chiapas	680,672	50,111
Chihuahua	1.702,918	128,960
Coahuila	9.607,677	2.710,000
Colima	16,224	1,058
Durango	7.975,256	1.337,126
Guerrero	1.679,905	136,500
Hidalgo	2,819	675
Jalisco	72,556	20,975
Michoacan	134,623	12,350
Nuevo Leon	78,530	12,322
Oaxaca	881,010	109,447
Puebla	18,732	2,496
San Luis Potosí	5,178	1,725
Sinaloa	596,251	69,320
Sonora	456,862	173,400
Tamaulipas	2,031	200
Tepic	368,198	32,000
Veracruz	3.062,375	275,497
Total	27.451,874	$ 5.082,531

Cocoa [*Theobroma cacao*] a very superior kind of this is cultivated in the hot and humid parts of our sea-board, that from Tabasco and from the district of Soconusco in the State of Chiapas being of the very best class, and considered very superior to all that is cultivated in other countries.

The annual production of this useful plant is as follows:

	Kilograms.	Value.
Chiapas	411,451	$ 342,426
Colima	856	800
Guerrero	1,427	1,152
Carried forward	413,734	344,378

	Kilograms.	Value.
Brought forward.....	413,734	344,378
Michoacan.....	2,803	3,790
Oaxaca.....	2,950	2,663
Tabasco.....	574,470	454,518
Veracruz.....	5,377	5,079
Total.....	1.099,334	$ 810,428

Indigo [*Indigofera*] is cultivated in Chiapas, Oaxaca, Guerrero, Michoacan, Colima and Jalisco, and although the eastern coast in perfectly adapted to the cultivation of this plant, and it is found there growing wild, the plantations of this useful article are limited to the coasts of the Pacific. This is an annual plant and during its life is cut two or three times; it does not require any great expenditure either of money or of labor for the extraction of the coloring matter.

Of the different classes of indigo which are known, that from San Salvador is the most highly valued, and after that, those of the Republics of Guatemala and Mexico. The annual production of this country is shown in the following table.

	Kilograms.	Value.
Chiapas.....	199,229	$ 209,740
Colima.....	9,430	20,500
Guerrero.....	2,877	3,500
Jalisco.....	17,073	24,100
Michoacan.....	11,851	27,600
Oaxaca.....	36,935	47,320
Total.....	277,395	$ 332,760

The hot country produces many other useful plants, amongst which may be cited the zarzaparrilla [*Smilax medica*] which is abundantly propagated; Tabasco pepper [*Eugenia pimenta*], manioc [*Iatropha manihot*], which produces starch, the mafafa, [*Xanthosoma robustum*], with a tuberculous root and the *ma-*

ranta arundinaca, from which is extracted the fecula of arrow root.

A very great number of plants are produced in the hot country which are useful both in medicine and in the industries, as well as many kinds of lichens which are useful for dyeing purposes, one of then being the *orchilla*, found in lower California which to-day forms an important article of exportation.

The zone which extends between the elevations of 1,000 and 1,600 metres, more or less, is that in which nature shows herself in her true richness and prodigality, having not only the vegetation that belongs to its own altitude, but a great deal that belongs to the Torrid Zone and the cold Zone. On the upper part of this zone we find large forests of oak, adorning the hills with their many colored leaves, whilst in the valleys we find thickes of myrtle, laurel, euforbiaceas, and kindred plants in rich variety. The valleys are full of forests of the beautiful liquid ambar [*Liquid ambar styraciflua*], which elevate their handsome tops, and give shelter to numerous flocks of birds, amongst them the *clarin de la selva* with its enchanting trumpet like note.

Like the hot region, this Temperate Zone produces many trees which are highly esteemed both for their fruits and precious woods, whilst the trunks and branches are covered with vines and creepers from which hang beautiful flowers and the orchids which grow in every little hole in the bark display their handsome colors and increase the beauty of the scene.

When this zone extends itself in to the heart of the mountains, its beauties are further increased by the water-falls that are so frequently found in the streams, giving the landscape a peculiar beauty which disapears at a greater altitude when it begins to be covered by the resinous plants.

The undulating crests of the high mountains are covered by conniferous trees, and the same may be said of the edge of the great Central Table-land, which is situated at an altitude of about 1,600 metres. The plains over this table-land which are

partly broken up by the ranges which radiate from the great Sierras, are covered with rich crops of wheat, barley, or corn during the Summer months, and especially is this the case in those spots where the agriculturist finds natural irrigation which enables him to cultivate all the year around. These lands are known as "irrigable lands" in contra-distinction to the dry spots which are known as season lands.

The great elevation of the Central Table-land, and the formation of its ranges with their perpendicular slopes, often covered with rocks of a volcanic formation which favor the filtration of the water, are the reasons why the interior of the country has comparatively few streams which can be utilized in agriculture, and especially is this so in the Northern regions of the country, where the traveller only finds a few brooks or water-holes here and there leaving the rest a desert.

The presence of the resinous plants indicates the complete transition from the Temperate to the cold zone. From an elevation of 2,700 to 3,000 metres, we find a rich and endlses variety of conifera; but above that limit the vegetation begins to show a want of vigor until it completely disappears at an elevation of 3,980 metres, giving place to a short grass that in its turn disappears entirely at 4,180 metres.

Beautiful forests are formed of the ahuehuetes [*Taxodium distichum*], the pitch-pine [*Pinus communis*], the white cedar [*Eupressus Lindley*], the oyametl [*Pinus religiosa*], the mountain cedar [*Chamoecypares thurifera*]: giving to the mountains by their orderly distribution, particularly of the oyameles, a picturesque conical form, which is peculiar to the cold region.

Some mountains are found to be covered by dwarf oaks, and mimosas, whilst on the plains one of the principal trees is the Perú [*Schinus molle*], tejocote [*Cratoejus mexicanus*], agaves and cacti which grow in many parts of the Republic, and some of which can be said to form forests on the mountain side, such as the prickly-pear [*Cactus opuntia*], or scattered on other slopes, such as the small and large biznaga [*Mamillaria mani-*

mama and parvimama], or else forming fences in the villages like the organ, [*Cactus exagonus*] and the pitahaya [*Cereus pitahaya*], whilst the garden fences and walls are covered with the dwarf prickly pears [*Cereus phillantus*], with magnificent red or white flowers, the magueys [*Agaves*], are found in all parts, either forming fences on the roadside, or planted in regular lines, and giving to the country a monotonous aspect which is in great contrast with the cultivated fields, the alfalfa plantations and the other crops that are found in the neighborhood of the villages.

The fields and lands in the neighborhood of different villages, particularly in the valley of Mexico, are ornamented with groups of handsome trees, at times in groves, and at others standing isolated on the plain amongst, which we find, the corpulent cedar, the willows, and the shady ash trees [*Fraxinus excelsior*], whilst in the gardens and orchards a large variety of fruit trees are cultivated, such as pears [*Pyrus communis*], peaches [*Persea vulgaris*], apricots, [*Prunnus armeniaca*], wild cherries [*Cerasus capollin*], alligator pears [*Persea gratissima*], apples [*Pyrus malus*], small apples [*Pyrus malus? var.*], figs [*Ficus carrica*], walnuts [*Juglans mucronata granatenis* and *regia*], white zapote [*Casimiroa edulis*] pomegranates [*Punica granatum*], cherries [*Cerasus vulgaris*], quinces [*Cydonia vulgaris*], and many others too numerous to mention.

All kinds of table vegetables are also produced in great abundance and variety.

1. The most handsome exemples of cedars are found in the park at Chapultepec, and in other places of the valley of Mexico, in Atlixco, (Puebla), and in Santa María del Tule (Oaxaca), is found the most corpulent tree known of this class. This cedar, a real giant in vegetation, measures at about one metre above the ground, 51.88 M. in circumfereence, with a total elevation of 38.68 metres. In order to give an idea of the enormous volume of the trunk and of its foliage, it is enough to say that ten persons can easily stand together in one of the

hollows of the first, and that the second, has the appearance of a large and dense forest. The most beautiful flowers, with a rich and extensive variety, are cultivated in the gardens that are found in almost all the towns and country houses, being one of the principal ornaments of the dwellings. The number of these flowers that grow wild in the fields and mountains is infinite, so much so, that in certain seasons of the year, they appear to be covered not with weeds and pasture, but with a variegated and many colored carpet, the highest parts being covered with the modest and fragrant flower of St. John [*Bouvardia longiflora*], with the precious and not less fragrant tuber rose [*Polyhantes tuberosa*[, and with the rose colored and graceful angel's wing, or *Begonia discolor*.

Maize [*Zea maiz*] is the most prolific plant grown in Mexico, and its cultivation is extended over the whole territory without any distinction of zones, but it is more prolific in the hot country where it gives a return of 250 or 300 for one, and in some districts even as much as 500 or 800 for one, these being districts in which three crops are taken per annum. The excesive heat of this section and the insects which attack the grain do not permit, as in the colder districts, the storing of this crop for any length of time. In the intermediate zones the crops will give from 175 to 200 for one, and in the cold regions the general return is 100 to 120 for one. We thus find that the production of this grain varies according to the temperature, humidity and heat of the district, as well as the care used in its cultivation, the latter condition having also a good deal to do with the different varieties that are developed.

Corn constitutes the principal article of food of the lower clases of the people, and of the larger part of the domestic animals.

According to the latest data, received in the department of Fomento, the annual production of corn is as follows:

	Hectolitres.	Value.
Aguascalientes	627,530	1.087,750
Lower California	11,049	30,360
Campeche	147,032	305,910
Chiapas	1.249,995	1.327,770
Chihuahua	587,236	1.201,605
Coahuila	607,460	1.410,000
Colima	870,364	926,093
Distrito Federal	329,913	915,365
Durango	956,853	2.042,937
Guanajuato	3.595,389	5.194,229
Guerrero	589,989	998,664
Hidalgo	739,719	1.688,332
Jalisco	3.275,148	4.383,964
México	1.673,330	3.625,406
Michoacan	1.550,192	2.416,066
Morelos	262,099	492,571
Nuevo Leon	447,063	752,235
Oaxaca	2.548,091	4.441,645
Puebla	1.612,287	3.222,215
Querétaro	519,349	1.054,905
San Luis Potosí	1.315,550	1.751,901
Sinaloa	326,618	848,314
Sonora	204,368	523,875
Tabasco	227,126	359,455
Tamaulipas	252,675	661,870
Tepic	361,034	521,710
Tlaxcala	200,617	407,358
Veracruz	918,106	2.246,506
Yucatan	706,223	1,422,296
Zacatecas	962,832	1.618,500
	27,774,237	$ 47.879,827

Wheat is produced in the cold regions, and of an excellent class in the valleys of Mexico and Toluca, in those of Atlixco and San Martin of the State of Puebla, in the low lands of the State of Guanajuato, in Querétaro, Michoacan, Coahuila and

Sonora. The returns of wheat average from 22 to 25 for one, but on fertile lands, and where well cultivated it reaches a return of 30 to 40 for one, whilst in the valley of Atlixco, and the fertile lowlands of Guanajuato, and others that we have mentioned the average often runs up to as high as 70 to 80. The Mexican flour is white and nutritious, and makes a very good class of bread.

The anual production of wheat is as follows:

	Hectolitres.	Value.
Aguascalientes	36,234	157,650
Lower California	8,337	40,220
Chiapas	18,703	89,310
Chihuahua	380,089	1.066,710
Coahuila	392,367	1.143,750
Distrito Federal	3,832	20,020
Durango	78,226	272,916
Guanajuato	499,904	1.954,832
Guerrero	55	270
Hidalgo	29,559	123,740
Jalisco	142,320	596,498
México	329,783	1.403,473
Michoacan	288,465	1.031,269
Morelos	1,853	8,160
Nuevo Leon	28,626	76,240
Oaxaca	200,278	804,791
Puebla	265,921	1.359,598
Querétaro	114,140	508,128
San Luis Potosí	111,911	431,857
Sinaloa	2,813	9,310
Sonora	381,720	1.001,250
Tamaulipas	36	160
Tepic	781	3,660
Tlaxcala	63,047	367,049
Veracruz	4,540	17,500
Zacatecas	46,764	169,622
	3.430,304	$ 12.657,983

Beans [*Phaseolus vulgaris*]. This leguminous seed is an inseparable companion of maize, and like the latter is produced in all the climates; it constitutes a very large part of the food of the poorer classes, and is a favorite dish with the richer. The are many varieties of this plant, but the principal are known under the names of *Parraleño*, *Bayo*, *Ayacote*, small white and black.

The annual production is as follows:

	Hectolitres.	Value.
Aguascalientes	53,165	$ 239,630
Lower California	1,445	11,440
Campeche	1,453	6,500
Chiapas	33,702	178,860
Chihuahua	83,969	390,025
Coahuila	38,594	166,500
Colima	8,326	26,341
Distrito Federal	9,982	30,791
Durango	33,951	136,765
Guanajuato	122,412	284,863
Guerrero	7,648	45,508
Hidalgo	35,317	159,232
Jalisco	81,719	291,106
México	28,534	177,376
Michoacan	29,453	115,163
Morelos	7,243	40,128
Nuevo Leon	4,022	17,218
Oaxaca	36,009	207,102
Puebla	74,394	375,225
Querétaro	64,849	183,303
San Luis Potosí	21,822	81,890
Sinaloa	18,984	86,580
Sonora	34,925	213,575
Tabasco	6,821	53,145
Tamaulipas	5,783	27,494
Tepic	8,447	37,750
Carried forward	852,969	$ 3.583,510

	Hectolitres.	Value.
Brought forward.....	852.969	$ 3.583,610
Tlaxcala.....	4,817	25,756
Veracruz.....	38,772	246,415
Yucatan.....	16,054	54,348
Zacatecas.....	42,448	159,278
	955,060	$ 4.069,307

Barley [*Hordeum vulgaris*], will grow even to the considerable altitude of 10,000 feet, where maize will not give any seed. Barley is cultivated in almost the entire Republic and more especially in the vicinity of the large towns, and of the principal high roads. Its product varies from 40 as high as 70 to one. Both the seed and the straw are largely used as food for horses, mules and other animals.

The following table shows the annual production.

	Hectolitres.	Value.
Aguascalientes.....	10,575	$ 11,600
Lower California.....	4,550	7,575
Chiapas.....	1,862	7,667
Chihuahua.....	10,889	20,001
Coahuila.....	161,630	375,000
Distrito Federal.....	29,460	51,070
Durango.....	3,105	8,495
Guanajuato.....	147,063	152,524
Guerrero.....	273	300
Hidalgo.....	358,596	523,208
Jalisco.....	29,403	34,127
México.....	448,037	834,865
Michoacan.....	57,511	76,593
Morelos.....	445	737
Nuevo Leon.....	6,020	11,548
Oaxaca.....	117,782	95,754
Puebla.....	429,949	667,795
Querétaro.....	43,170	60,039
Carried forward.....	1.860,320	$ 2.938,898

	Hectolitres.	Value.
Brought forward.....	1.860,320	$ 2.938,898
San Luis Potosí.....	21,121	31,734
Sinaloa.....	908	3,000
Sonora.....	5,389	11,192
Tamaulipas.....	726	1,600
Tepic.....	831	1,975
Tlaxcala.....	155,828	218,585
Veracruz.....	57,787	72,354
Zacatecas.....	28,894	52,483
	2.131,714	$ 3.331,822

Chick peas [*Cicer arietinum*]. This plant is principally cultivated in places which have been inundated by the overflow of the rivers or lakes. Its cultivation is most advantageously carried on during winter, because after the crop is taken off the ground is easilly prepared for the cultivation of corn. There are two classes of this seed, both of good quality and largely consumed by the people of the middle class, whilst the smaller class is what is mostly consumed by the poor people, and in the fattening of hogs.

The annual production is as follows:

	Hectolitres.	Value.
Lower California.....	162	$ 1,172
Chiapas.....	492	4,752
Chihuahua.....	5,950	18,881
Coahuila.....	8,627	32,500
Durango.....	1,150	5,052
Guanajuato.....	85,827	218,264
Guerrero.....	2,822	11,918
Hidalgo.....	336	990
Jalisco.....	30,110	66,383
México.....	54	210
Michoacan.....	71,939	147,858
Carried forward.....	207,469	$ 507,980

	Hectolitres.	Value.
Brought forward.....	207,469	$ 507,980
Morelos.....	545	5,400
Nuevo Leon.....	589	2,650
Oaxaca.....	2,414	8,876
Puebla.....	349	1,526
Querétaro.....	15,937	52,365
San Luis Potosí.....	2,050	3,878
Sinaloa.....	2,741	10,088
Sonora.....	7,420	40,700
Tamaulipas.....	395	2,223
Tepic.....	545	1,650
Zacatecas.....	222	960
	238,676	$ 636,296

Peas [*Pisum sativum*]. This is very largely cultivated and is consumed both dry and green. In many places, and principally in the low lands of Guanajuato it is used for the fattening of hogs.

The annual production is as follows:

	Hectolitres	Value.
Lower California.....	581	$ 3,920
Chihuahua.....	9,612	52,038
Distrito Federal.....	2,001	7,955
Durango.....	23	150
Guanajuato.....	3,291	15,636
Hidalgo.....	15,143	44,842
Jalisco.....	280	1,115
México.....	13,006	39,198
Michoacan.....	912	2,819
Morelos.....	91	300
Nuevo Leon.....	9	15
Oaxaca.....	2,851	5,092
Puebla.....	11,541	41,099
Querétaro.....	27	120
Carried forward.....	59,368	$ 214,299

	Hectolitres.	Value.
Brought forward.....	59,368	$ 214,299
Sonora.....	832	3,710
Tlaxcala.....	2,185	3,944
Veracruz.....	1,891	8,461
	64,276	$ 230,414

Lentils [*Ervum lens*]. The consumption of this seed is not on such a large scale as that of the others we have mentioned and therefore its cultivation is relatively smaller, as may be seen from the following table of annual production.

	Hectolitres.	Value.
Aguascalientes.....	45	$ 200
Lower California.....	36	140
Chiapas.....	91	150
Chihuahua.....	2,730	6,208
Durango.....	1,022	3,656
Guanajuato.....	1,108	4,620
Hidalgo.....	116	760
Jalisco.....	109	180
México.....	732	3,010
Michoacan.....	572	935
Nuevo Leon.....	5	25
Oaxaca.....	27	105
Puebla.....	256	1,029
Querétaro.....	1,480	4,890
Sonora.....	480	2,450
Tlaxcala.....	936	2,090
Zacatecas.....	196	735
	9,941	$ 31,183

Lima beans [*Vicia faba*]. This important crop is produced in almost all the States of the Republic, and particularly in the sandy plains of the cold region. It is served on the table in the shape of puré, and is also employed as forrage for horses and hogs. Its annual production it as follows:

	Hectolitres.	Value.
Aguascalientes	46	$ 100
Lower California	18	60
Chiapas	647	2,818
Chihuahua	3,166	8,636
Distrito Federal	4,236	12,945
Durango	2,468	8,454
Guanajuato	10,235	17,580
Hidalgo	11,834	25,534
Jalisco	163	300
México	26,752	69,764
Michoacan	13,945	17,178
Morelos	301	564
Nuevo Leon	22	54
Oaxaca	3,163	5,746
Puebla	63,671	133,464
Querétaro	227	625
San Luis Potosí	249	765
Sonora	212	692
Tlaxcala	41,285	55,331
Veracruz	1,772	3,216
Zacatecas	490	1,335
	184,902	$ 365,161

Sesame seed [*Sesamum indico*]. This is one of the principal oil producing plants, among those which are cultivated in the Republic. It produces as high as 50 per cent of oil, which is used as medicine as well as for lighting and in the manufacture of soap. The seed, either raw or toasted, is used as a condiment for certain stews and preserves.

The following table shows the annual production.

	Kilograms.	Value.
Chiapas	7,019	$ 915
Colima	51,150	200
Guerrero	818,091	35,855
Carried forward	876,260	$ 36.970

	Kilograms.	Value.
Brought forwerd.....	876,260	$ 36,970
Hidalgo.....	42,205	5,670
México.....	8,284	432
Michoacán.....	863,052	37,032
Morelos.....	62,134	5,400
Puebla.....	113,911	10,025
San Luis Potosí.....	19.212	1,063
Tamaulipas.....	17,259	1,440
Veracruz.....	6,918	529
	1.959,235	$ 98,561

Chia [*Salvia chian*]. This seed is extensively cultivated in different parts of the great Central Tableland. It is a very small seed, and contains fecula, a drying oil and a mucilage like gum tragacanth, and when mixed with water swells considerably. In this condition, it is sweetened, and with the addition of a little lemon juice, makes an agreeable and refreshing drink. The only data that we have been able to procure as to its production, is from the State of Guanajuato, and shows a crop a 138,074 kilograms with a value of $ 12,000

Peanut [*Arachis hypogea*], This nut is indigenous to Mexico, and is generaly found cultivated in the sections where sweet potatoes are grown, that is to say in the States of Guanajuato, Querétaro and Michoacan. The small roots which grow underground have from two to six oleagenous nuts, which when toasted in the oven have a most delicious flavor. The same nuts produce a special class of oil and the roots are commonly employed as a substitute for horehound. The annual production is as follows:

	Hectolitres.	Value.
Aguascalientes.....	2,724	$ 6,000
Chihuahua.....	727	3,200
Durango.....	1,090	3,300
Guanajuato.....	1,071	4,732
Carried forward.....	5,612	$ 17,232

	Hectolitres.	Value.
Brought forward.....	5,612	$ 17,232
Hidalgo.....	454	1,256
Jalisco.....	45	104
Oaxaca.....	1,725	4,750
Veracruz.....	36	156
	7,872	$ 23,492

Potatoes [*Solanum tuberosum*]. The cultivation of this important tuber is extended over the greater part of the country at the higher elevations, such as are proper for resinous plants, because although it will grow in the hot ceuntry it does not throw out enough roots and therefore, gives a very small crop, The Mexican potatoe is very similar to the European, and like that is very abundant in flour, and of good flavor. The annual crop is as follows:

	Kilograms.	Value.
Aguascalientes.....	32,682	$ 1,780
Lower California.....	23,012	1,500
Chiapas.....	294,599	7,680
Chihuahua.....	242,899	10,292
Coahuila.....	483,260	42,000
Durango.....	278,174	16,592
Guanajuato.....	71,569	4,665
Guerrero.....	30,100	5,004
Hidalgo.....	210,918	26,720
Jalisco.....	226,626	10,952
México.....	559,772	35,810
Michoacan.....	354,712	15,115
Morelos.....	11,046	960
Nuevo Leon.....	73,179	4,580
Oaxaca.....	196,801	7,769
Puebla.....	1.420,740	55,684
Querétaro.....	78,732	2,830
San Luis Potosí.....	157,821	5,370
Carried forward.....	4.746,642	$ 275,303

	Kilograms.	Value.
Brought forward.....	4.746,642	$ 272,303
Sinaloa.....	157,819	11,316
Sonora.....	103,956	7,240
Tabasco.....	13,807	125
Tamaulipas.....	16,569	840
Tepic.....	90,024	4,524
Tlaxcala.....	425,269	16,480
Veracruz.....	509,909	21,700
Zacatecas.....	559,742	33,902
	6.623,737	$ 351,430

Chili pepper. This is produced throughout the entire country and in great abundance throughout the temperate and damp districts. There are many species and varieties of this valuable plant which are used either green or dry in pickles, and in prepared sauces, constituting the flavouring material which is mostly employed by the Indians and poor people. It is largely used as a condiment for dishes prepared with either corn or beans. Some of them are used dry and others in their green condition, and are known by their size, their flavour and their taste which is more or less fiery.

The principal classes are: *Capsicum longum*, amongst whose varieties we have the *Chile pasilla* very largely consumed and extensively cultivated, particularly on the estate of "Querén-daro" of the State of Michoacan. Its fruit is long, measuring as much as 19 centimetres and when ripe it has a dark color, which turns to black on drying, that being the form in which it is marketed.

The *Capsicum cordiforme*, one variety of which is called *Chile ancho*, is also extensively consumed and is cultivated on a very large scale on the estate of "El Jaral" in the State of Guanajuato. The *Chile mulato* is another variety which is very similar in its taste to the *Capsicum dulce*, or *valenciano*, and which in its green state is commonly called *poblano;* it is specially cultivated in the States of Puebla and Oaxaca.

The annual crops of dry chile alone reach the following amounts:

	Kilograms.	Value.
Aguascalientes	233,219	$ 48,450
Lower California	1,266	550
Campeche	2,301	750
Chiapas	57,709	12,527
Chihuahua	535,037	144,687
Coahuila	368,198	18,000
Durango	292,602	51,563
Guanajuato	826,778	267,615
Guerrero	117,611	23,551
Hidalgo	154,425	34,537
Jalisco	570,697	102,282
México	41,192	13,075
Michoacan	799,773	269,693
Morelos	41,422	18,000
Nuevo Leon	8,020	849
Oaxaca	158,994	55,385
Puebla	475,970	132,958
Querétaro	327,351	84,950
San Luis Potosí	883,210	160,320
Sinaloa	805	210
Sonora	261,641	42,015
Tamaulipas	13,290	3,465
Tepic	6,559	2,200
Tlaxcala	36,129	12,825
Veracruz	183,028	37,157
Yucatan	64,361	14,925
Zacatecas	465,552	110,024
	6.906,140	$ 1.648,368

The vine [*Vitis vinifera*]. The introduction of the grape vine into Mexican territory was due to the Father of our Independance, the celebrated curate of the town of Dolores, Don Miguel Hidalgo y Costilla. Not content with introducing many public improvements in his parish, he undertook the cultiva-

tion of this plant on a large scale. From Dolores this valuable vine was propagated throughout the Northern regions of the country, as far as the town of Parras, and to-day its cultivation is extended to many States of the Republic.

The annual products derived from this plant are as follows:

GRAPES.

	Kilograms.	Value.
Aguascalientes	162,468	$ 26,120
Lower California	78,241	15,600
Chiapas	1,151	160
Chihuahua	1.391,836	191,170
Coahuila	1.560,241	64,600
Durango	200,898	12,210
Guanajuato	304,625	14,900
Hidalgo	18,272	1,602
Jalisco	193,318	16,583
Michoacan	690	40
Nuevo Leon	2,899	204
Puebla	11,506	500
Querétaro	16,281	1,515
San Luis Potosí	12,392	987
Sonora	82,937	7,626
Zacatecas	183,907	19,661
	4.221,662	$ 373,478

WINE.

	Hectolitres.	Value.
Aguascalientes	137	5,000
Lower California	91	2,500
Chihuahua	4,836	71,300
Coahuila	3,897	68,600
Durango	366	13,175
Guanajuato	367	16,859
Jalisco	48	1,380
Puebla	136	1,600
Carried forward	9,878	$ 180,414

	Hectolitres.	Value.
Brought forward.....	9,878	$ 180,414
Querétaro.....	14	280
San Luis Potosí.....	140	6,150
Sonora.....	14	720
Zacatecas.....	433	9,465
	10,479	$ 197,029
SPIRITS.		
Lower California.....	227	$ 6,637
Chihuahua.....	705	20,965
Coahuila.....	2,941	80,400
Guanajuato.....	68	1,500
San Luis Potosí.....	32	6,290
Sonora.....	9	450
Zacatecas.....	29	1,095
	4,011	$ 112,337
Total value of products of vines.....		$ 682,844

Maguey is the general name by which is designated the different species of the genus agave, of the family of the *Amarilideas*. This species is found disseminated throughout the Republic, having the most varied uses and products.

The cultivated maguey or metl [*Agave potatorum*] produces the drink known under the name of pulque, the finest and best quality being produced of the plains of Apam and the adjacent lands of the States of Mexico and Hidalgo. The limits of this zone may be considered to be Pachuca on the North, Huamantla on the East, Texcoco on the South, and Zumpango on the West, All the other districts of these States, of Puebla, and the Federal District, produce the same liquor but of inferir class, commonly called *pulque tlachique*, although the plants from which the liquor is extracted are of the same class as those on the plains of Apam, thus proving that in the latter district the plant is specially favored by the quality of the land and the climate. This class of maguey also produces a sugar

whose sacharine qualities are superior to that of beet root sugar, and very little inferior to that of the white cane sugar.

When properly distilled, fresh pulque yields different quantities of alcohol according to its degree of acidity, and the larger or smaller amount of water that has been added. Strong cordage and a fair class of paper are manufactured from its fibres.

The maguey is one of the most useful plants to man, for besides producing great benefits in the forms above referred to, it also provides the poor people of the country leaves for thatching their humble cottages; from some classes a valuable spirit is extracted called mezcal; the leaves yield fibre which are made into twine, ropes, and cloth; the points furnish pins and nails for the country people and when the trunk has been killed in the extraction of pulque, it makes fuel for the poor, whilst even the ashes which are the last vestige of this useful plant, furnish a remedy for the curing of certain diseases in animals. The species of maguey known as *lechuguilla* yields a fibre with an average length of 60 to 80 centimetres, and is found growing in all parts of the Republic.

The leaves of other species of this valuable plant produce beautifully soft fibres which reach a length of 3 yards, and are manufactured into cordage, bagging, and cloths of different qualities, but of great utility. Some varieties of the maguey which are found in the interior of the country, produce a spirit called mezcal, which is very similar to gin, whilst in the 12th Canton of the State of Jalisco the famous Tequila is made, which is believed to be very similar to Jamaica rum.

And lastly, the special variety of maguey which is indigenous to the Peninsular of Yucatan, produces a particularly valuable fibre, which is so highly esteemed that it forms the principal trade of that section.

The great consumption of pulque in all the towns of those districts which produce the *maguey manso*, and in all the vicinity of that region, particularly the city of Mexico; the very

general use of mezcal and tequila; the production of ixtle fibre, which is so largely exported, reaching the amount of 8.000,000 kilograms, and henequen the amount of 54.000,000 kilograms; all go to prove the enormous importance of the cultivation of the numerous varieties of the Mexican maguey.

The following table shows the principal productions of the maguey in one year:

MEZCAL SPIRIT.

	Hectolitres.	Value.
Lower California	310	$ 6,800
Chiapas	7,446	100,720
Chihuahua	10,043	187,500
Coahuila	52,818	894,600
Durango	15,391	271,880
Guanajuato	5,612	186,312
Guerrero	6,919	69,071
Hidalgo	582	5,680
Jalisco	111,561	1.166,240
México	59	1,120
Michoacan	1,051	17,920
Morelos	909	14,272
Nuevo Leon	1,581	21,550
Oaxaca	11,704	189,028
Puebla	3,310	50,922
Querétaro	133	2,160
San Luis Potosí	33,063	331,548
Sinaloa	8,314	146,814
Sonora	6,774	186,425
Tamaulipas	822	13,445
Tepic	369	4,500
Tlaxcala	414	7,848
Zacatecas	13,417	165,600
	292,602	$ 4.041,955

PULQUE.

	Hectolitres.	Value.
Aguascalientes	164	1,000
Chiapas	7,000	15,000
Coahuila	24,624	50,000
Federal District	84,843	139,607
Durango	3,313	6,800
Guanajuato	40,407	57,140
Guerrero	74	135
Hidalgo	1.586,310	2.471,564
Jalisco	9,571	26,754
México	662,908	1.072,395
Michoacan	83,210	153,221
Morelos	270	648
Oaxaca	81,309	149,780
Puebla	118,790	155,393
Querétaro	26,746	46,282
San Luis Potosí	27,168	37,512
Tamaulipas	74	400
Tlaxcala	338,436	512,837
Veracruz	8,954	10,490
Zacatecas	9,819	24,617
	3.113,990	$ 4.931,575

HENEQUEN FIBRE.

	Kilograms.	Value.
Campeche	1.067,567	$ 176,600
Chiapas	93,338	14,659
Veracruz	10,010	2,674
Yucatan	57.218,000	8.195,792
	58.388,915	$ 8.388,792

IXTLE FIBRE.

Aguascalientes	11,506	$ 1,000
Chiapas	113,278	14,856
Chihuahua	34,519	1,500
Carried forward	159,303	$ 17,356

	Kilograms.	Value.
Brought forward.....	159,303	$ 17,356
Coahuila.....	1.840,992	112,625
Durango.....	56,956	3,675
Guanajuato.....	640,823	24,190
Guerrero.....	17,075	2,273
Hidalgo.....	104,856	12,136
Jalisco.....	79,059	8,957
México.....	39,305	5,670
Michoacán.....	7,824	1,791
Morelos.....	115	20
Nuevo Leon.....	521,231	34,005
Oaxaca.....	395,100	26,696
Puebla.....	10,413	957
Querétaro.....	30,463	2,344
San Luis Potosí.....	1.638,780	143,810
Sinaloa.....	12,082	1,700
Tabasco.....	8,054	2,800
Tamaulipas.....	2.531,364	165,000
Tepic.....	1,151	100
Tlaxcala.....	6,904	150
Veracruz.....	9,205	1,530
Zacatecas.....	51,930	5,657
	8.162,985	$ 15.170,612

TEXTILE PLANTS.

From what has already been written, it will be observed, that the vegetation throughout the territory of the Republic is as rich as it is varied in the three regions mentioned, the number of textile plants which are found through the entire country being really wonderful. The greater part of them grow spontaneously with a prodigious development, providing valuable filaments for industrial purposses, and ranging from the finest classes to the coarsest and strongest, which are equally good if not superior to the best hemp.

The principal plants worth mentioning in this class are as follows:

Different kinds of magueys or agaves, such as the *agave ixtli*, *agave lechuguilla*, *agave americana*, *agave mexicana*, *agave vivipara*, *agave saponaria*, *agave lutea* and many others, the principal varieties of which we have already spoken of, as well as their more important products.

Several species of plaintains *(Musa)* which as well as the tules *(Cyperus)* contain an abundant supply of fine white fibres.

Amongst the *Malvaceas*, we find growing wild the Huinar or Alacle de Morelos *(Sida romboidea)* with long and light colored filaments. Other species of Huinar, such as the *Malva Scoparia*, found in Michoacan and commonly called Popotalagua or Apilzapatli, and the *Malvabiscus arboreus*, the Mazahual *(Hibiscua tiliaceus)*, abound on the gulf coast.

Of the *Urticacea* familly we find the *Urtica dioica* with a textile bark very similar to hemp, the chichicaxtle of the State of Morelos which appears to be a species of *Baehmaria*, producing an excellent filament. The ramie, *Urtica Baehmaria*, is cultivated with excellent results in various parts of the Republic, principally in the States of Puebla and San Luis Potosí.

Different *Bromeliaceas*, such as the Bromelia of Tehuantepec the grasses *(Tillandsia)*, and the Izotes *(Yucas)* of the lilaceas.

Numerous speices of palms also supply excellent fibres which can be utilized in different industries.

Other plants of different families also produce very good fibres, such as the cotton of the biznagas *(Mamillaria)*; the cacti, among which are found the organ *(Cactus cereus)* with a long silky filament; the Pochote *(Eriodendron anfractuossum)*, whose seeds are inclosed in filaments as fine as those of cotton, and cuaulahua *(Heliocarpus Americanus)* found in the States of Morelos and Puebla, as well as the flax already spoken of. In the territory of Lower California, between the degrees of 27 and 31 N. L. a species of cactus is produced which

is called Cirio, and whose fibres form excellent material for the manufacture of paper, whilst on the banks of the Colorado river hemp is found in abundance.

Summarizing the preceeding data we find the value of the principal agricultural products of the country, to be as follows:

Vanilla	Thousands.	28,000	1.000,000
Jalap root	Kilograms.	97,020	100,000
SUGAR CANE PRODUCTS.			
Sugar	„	41.043,469	6.471,232
Panocha	„	62.992,438	4.260,632
Spirits	Hectolitres.	296,623	4.057,512
Coffee	Kilograms.	19.369,000	7.516,090
Tobacco	„	5.711,968	1.979,915
Rice	„	10.694,170	878,213
Cotton	„	27.451,874	5.082,531
Cocoa	„	1.099,334	810,428
Indigo	„	277,395	332,760
Maize	Hectolitres.	27.774,237	47.879,827
Wheat	„	3.430,304	12.657,983
Beans	„	955,060	4.069,307
Barley	„	2.131,714	3.331,822
Chick peas	„	238,676	636,292
Peas	„	64,276	230,414
Lentils	„	9,941	31,183
Lima beans	„	184,902	365,161
Sesame seed	Kilograms.	1.959,235	98,561
Chia	„	138,074	12,000
Peanuts	Hectolitres.	7,872	23,492
Potatoes	Kilograms.	6.623,737	351,430
Chile peppers	„	6.906,140	1.648,368
Carried forward		219.485,459	$ 103.825.153

Brought forward.....		219.485,459	$ 103.825,153
GRAPE VINE PRODUCTS.			
Grapes.....	„	4.221,662	373,478
Wine.....	Hectolitres.	10,479	197,029
Spirits.....	„	4,011	682,844
MAGUEY PRODUCTS.			
Spirits.....	„	292,602	4.041,955
Pulque.....	„	3.113,990	4.931,575
Henequen.....	Kilograms.	68.388,915	8.388,792
Ixtle.....	„	8.162,985	15,170,612
Linseed.....	„	726,340	37,610
Value of principal Agricultural Products.....			$ 137649,858

X

COLONIES.

The colonization laws authorize the Gorvernment to colonize the country either by direct action or by means of contracts with private companies, granting to the colonists various privileges and exemptions, such as selling to them the lands they require at a low price and on long time, allowing them also to pay by annual instalments, the first of which would come payable two years after the settlement of the colonies. They also grant an exemption for 10 years, from military service and from all classes of taxes, except municipal taxes; also an exemption from the payment of import and interior duties on all the provisions, agricultural implements, tools, utensils, building materials, second hand furniture, animals for work or for breeding, that may be destined for the colonies. They also enjoy an exemption which is personal and intransferable, from the payment of export duties on the products of their farms, besides premiums and special protection on the introduction of a new cultivation or industry.

This law also authorizes the Government to concede Mexican naturalization and citizenship to the colonists and to advance them the necesary sums for their transport and maintenance as well as for the purchase of the agricultural implements and material with which to build their houses.

The Government being desirous of attracting to Mexican territory, colonists from abroad, it made several attempts to

establish different colonies, and in virtue of the authority granted to it, contracted the transport of a large number, to whom it conceded the privileges and advances above mentioned; but it afterwards altered this system, providing the colonists with their passages from the port of departure to that in which they land, and selling them a specified area of land at a low price payable in long periods, besides granting them all the privileges and exemptions which are specified in the liberal laws of the country.

In different districts of México, especially in the frontier States and on the coasts of both seas, an industrious and intelligent colonist can find ample resources for his well being and prosperity.

In Chihuahua, Sonora, Coahuila and Tamaulipas, there exist enormous areas of very fertile land, where the water which is so indispensable to agriculture, is not as scarce as it is in the interior States of the central table land. On the slopes of the Cordilleras, the lands are extraordinarily fertile, with an abundance of water and a climate both temperate and healthy; these districts offer the most splendid future to colonists, especially if they cultivate the tropical fruits proper to the districts. In these parts they do not find the drawbacks which are common to the districts near the coast, such as the endemic diseases which there prevail and which especially attack the persons who are not aclimated. Nevertheless, we have to note that for many years a prosperous French colony has existed in Jicaltepec on the banks of the Nautla River, showing that even in the hot country successful colonies can be formed, when the colonists settling in it lead a temperate and orderly life.

The colonization of the fertile lands on the coast is capable of producing the very best results, if it is carried out with individuals brought from other countries with a climate more or less similar to that of our maritime regions.

On account of the scarcity of water, the lands favorable to

colonization in the interior of the country are rather scarce, and those which are found under favorable conditions belong to private parties, whilst in the other zones we have an inmense area of waste lands, which can easily be obtained by a special law on the matter or under the general colonization laws. By the first process, every inhabitant of the Republic is allowed to acquire by denouncement and without prejudice to the rights of third parties, up to 2,500 hectaras of land, with the only restriction, that if they are citizens of the nations on the same boundary they shall not be allowed to purchase any lands within any of the frontier States. Under the second of these laws, any person who has been duly authorized by the Government, to survey waste lands with the object of colonizing them, is granted a third part of lands so surveyed.

Every two years the Department of Fomento publishes a tariff of prices under which the waste lands will be sold.

The European colonies which have been established within the Republic, are the following;

The first and oldest, was colonized with French people in Jicaltepec in the State of Veracruz, near the port of Nautla and in the torrid zone. The principal resource of this colony, consists of vanilla which is here produced of a very superior quality. Other Europeans, mostly Italians, have settled in that neighborhood and have dedicated themselves largely to the same cultivation. Number of colonists 700.

This colony extends for 5 or 6 leagues on the banks of the River Palmar or Nautla, divided in three groups; Jicaltepec, San Rafael and Zopilote.

The annual productions of this district are very considerable, as can be seen by the following table:

2,000 vanillas at $ 50 per thousand.....	$ 100,000
2,500 quintals of tobacco.....	30,000
4,000 quintals coffee at $ 10.....	40,000
Carried forward.....	$ 140,000

Brought forward.....	$ 140,000
2,000 head of cattle at $ 25.....	50,000
10,000 fanegas of corn.....	20,000
2,000 barrels alcohol.....	20,000
Sundries.....	100,000
	$ 360,000

COINS.

The second colony which is called "Manuel González," is situated in Huatuxco, one of the healthiest regions in the temperate zone in the State of Veracruz. It is composed of 115 Italian and Mexican families, who are occupied in the cultivation of coffee, tobacco, sugar–cane, white mulberry, yuca, grape vines, cotton, rice, corn, beans and some fruits, 609.

The third colony is "Porfirio Diaz," in the municipality of Tlaltizapan, in the district of Juárez and State of Morelos. It is formed of 76 families which are mostly Mexicans, with a few Italians. This colony cultivates corn, beans, sugar–cane and rice, besides breeding a large number of cattle. Number of colonists, 293.

The fourth colony is "Cárlos Pacheco," situated in Tlatlauquitepec of the State of Puebla, and is placed in a very healty locality, although within the hot zone. It is colonized by 44 Mexican and Italian families, who cultivate the same class of crops as the preceeding colonies. A few Italian families have settled in Teteles within the cold zone where they cultivate cereals and ramie, 137.

The fifth colony is called "Fernández Leal," and is established in the cold zone, in the district of Cholula in the State of Puebla. This colony contains 82 families, who are occupied in the cultivation of corn, wheat, beans, the breeding of cattle, and the making of cheese and butter, 407.

The sixth is denominated "Diez Gutiérrez," and is situated in Ojo de Leon, district of Ciudad del Maíz and of San Luis Potosí. The climate is temperate and very healthy. The pro-

ducts of this colony are corn, beans, potatoes, chick peas, chile, tobacco and different fruits, principally peaches and figs. They also breed large numbers of horned cattle and horses. The colony is composed of 63 families, mostly Italians, and their number reaches, 277.

In the neighborhood of the Capital and within the municipality of Tacuba, the "Aldana" colony was formed with 52 Mexican and 60 Italian colonists, who are occupied in the cultivation of corn, alfalfa and vegetables for market, as well as in the breeding of stock, 112.

Besides the "Porfirio Diaz" colony, the following were established in the State of Morelos;

San Pablo Hidalgo with 54 Mexican families, in the Municipality of Tlaltizapan, 213.

San Rafael Zaragoza in the same Municipality, with 133 families, 440.

San Vicente Juárez in the district of Morelos and Municipality, of Ayala. Twenty–six families, 101.

All these colonies were established in virtue of the laws on the subject and have given the best results, as is proved by the colonists having paid all the advances made by the Government.

Besides these colonies which were originally established by the Government at the time when colonization was first started, the following have also been founded with a remarkably prosperous result.

IN THE NORTHERN DISTRICT OF LOWER CALIFORNIA.

The "Cárlos Pacheco" colony, which includes the towns of San Cárlos, Ensenada de Todos Santos and Punta Banda. It is formed of 106 Mexican, American and other families, their principal occupations being agriculture, tanning, canning, flour–milling and the cultivation of fruits, such as peaches, pears, apples and different kinds of grapes.

The crops of this colony during the year 1891, were as follows:

Wheat, kilograms		730,209
Barley,	„	141,359
Corn,	„	242,284
Beans,	„	165,183
Potatoes,	„	135,822
Onions,	„	20,194
Fruits,	„	146,850
Grapes,	„	250,680
Fodder,	„	587,393

The number of colonists is 529.

The "Romero Rubio" colony, is situated in San Quintín and contains 27 kilometres of the Peninsula Railroad which starts from that port in a northerly direction. It is formed of 14 Mexican, American and other families, and numbers 73.

The "Tecape" colony is situated on the frontier and is formed of 59 families which are occupied in agriculture, their annual products being as follows:

Barley	Kilograms,	55,230
Corn	„	57,531
Wheat	„	11,966
Beans	„	5,983
Lentils	„	2,991
Potatoes	„	1,150
Chile Peppers	„	1,841
Wheat and Barley straw	„	276,148

The colonists number 351.

The mining colony of Santa Agueda was founded by the Bodea Company, and is fully described in the chapter on mining, under the heading of Lower California.

The colonists number 3,722.

STATE OF COAHUILA.

"Nacimiento" colony, in the district of Monclova, and Municipality of Muzquiz, containing 490.

STATE OF CHIHUAHUA.

There are five colonies established in this State, with American, English, Danish, Scotch, Mexican and other families.

The following are the names and populations of the colonies:

Las Palomas with	145
Juárez	543
Diaz	727
Pacheco	311
Dublan	492
	2,218

Ascension, with families brought back from the United States, 2,294.

STATE OF DURANGO.

The colony at Tlahualilo, contains 18 families, with a total of 69.

STATE OF SINALOA.

The colony of Topolobampo is one of the most remarkable, for its developement and prosperity. The colonists have planted 1,300 orange trees, 400 figs, 200 grape vines and many other fruit trees, besides giving due attention to their agricultural labors and to the cultivation of corn, beans and vegetables. They have built a canal 12 kilometres in length and 7 metres in depth, with a capacity of 16,000 hectolitres per minute at a cost of $ 200,000. They have cleared a very large extent of land which is dedicated to agriculture. They have established shoe and tin plate factories, lumber-mills, planing-mills, and flour-mills. The houses, which are built of brick and

stone, are comfortable, as well as the buildings which have been dedicated to public purposes, such as custom–house and rope–walk. The colony possesses a small printing office, a fortnightly news–paper, school for boys and girls, a club and Lyceum in which lectures and concerts are given every Saturday.

There are 83 families in the colony and the total number of colonists of all nationalities amounts to 464.

STATE OF MÉXICO.

A sericicultural colony has been established in Tenancingo, the inhabitants of which cultivate crops of tomatoes, beans, wheat and sugar–cane. It is formed of 20 families with a total of 80.

STATE OF CHIAPAS.

The colony of "Nejapa" in Soconusco, and Municipality of Tapachula, contains ten families with a total of 35.

STATE OF SONORA.

The Oaxaca colony in the district of Moctezuma contains 69 families, with a total of 314.

Total number of colonists, 13,977.

WEIGHTS AND MEASURES.

Those which have been adopted in this Republic are of the French decimal system

	Mexican measures.	Metrical measures.
Lineal	1 Vara Mexican	0.838 metres.
	1 League [5,000 varas]	4190 ,,
Superficial.	1 Square vara	0.702244 square metres.
	1 Fanega	35.662 ,, ,,
	1 Caballería of ground	427.953 ,, ,,
	1 Sitio de ganado mayor.	17.556100 ,, ,,
Capacity	1 Cubic vara	0.588480472 cubic metres.
	1 Carga, dry measure	181.629775 litres.
	1 Cuartillo, liquid	0.506162 ,,
Weights	1 Pound	0.46024634 kilograms.
	1 Arroba	11.506159 ,,
	1 Quintal	46.024634 ,,

XI

MINING.

Nature has richly endowed this country with metallic deposits of all kinds and throughout its whole extent, and innumerable mining undertakings have worked with more or less fortune in the extraction of these minerals, some of them, with enormous profits. If these works had always been carried out with the necessary intelligence and economy, the results of their exploitation would have been enormously increased, because the riches extracted from the principal mining districts are not to be compared with those which are known to be still held in the interior of the mountains.

It is well known that from the State of Sonora to that of Oaxaca, over an extent of country covering 2,000 kilometers N. W. to S. E. there exists a metalliferous zone which includes most of the mineral districts of the Republic, and in which the most important mining centers are found in Zacatecas, Guanajuato and Pachuca.

This zone includes the following, which may be considered the principal mining districts:

In Sonora.—Arizona, Zubiate, Jamaica, Cobre, San Antonio, Bronces, San Javier, Aigamé and Alamos.

In Chihuahua.—Batopilas, Cerro Colorado, Jesus María, Cosihuiriachic, Concepcion, Magurichic, Guazapares, Urique, Guadalupe y Calvo, San Francisco del Oro and Hidalgo del Parral.

In Sinaloa.—Guadalupe de los Reyes, San José de Gracia, Alisos, Joya, Cosalá, Pánuco, Copala and Rosario.

In Durango.—Sianori, Indé, El Oro, Guanaceví, Topia, Canelas, Gavilanes, San Dimas, Tominil, Guarisamey, Ventanas, Corpus, Comitala, Durango, Cuencamé, Noria, Avino, Coneto and San Juan de Guadalupe.

In Zacatecas.—Zacatecas, Veta Grande y Pánuco, Fresnillo, Plateros, Potrero, Mazapil, Pico de Teyra, Bonanza, Mezquital, Sombrerete, Pinos, Chalchihuites and Mezquital del Oro.

In Aguascalientes.—Asientos and Tepezalá.

In Jalisco.—Bolaños, Hostotipaquillo, Reyes, Bramador, Estancia, Cuale, San Sebastian, Comanja and Pihuamo.

In San Luis Potosí.—Catorce, Charcas, Guadalcazar, Cerro de San Pedro, Bernalejo and Ramos.

In Guanajuato.—La Luz, Rayas, Valenciana, Santa Rosa, Monte de San Nicolás, Sirena, Villalpando, Nayal, Santa Ana, San Bruno, Joya, Mejiamora, Vejera, Durazno, Atarjea, Gato, San Pedro de los Pozos, Xichu and San Luis de la Paz.

In Querétaro.—Las Aguas, El Doctor, Maconí and Escanela,

In Hidalgo.—Pachuca, Real del Monte, Atotonilco el Chico, Zimapan, Jacala, Cardonal, La Bonanza, La Pechuga, Santa Rosa, Capula, and Tepenené.

In México.—Mineral del Oro, Temascaltepec, Sultepec, El Cristo and Zacualpan.

In Michoacan.—Tlalpujahua, Angangueo, Curucupaseo, Inguaran, Churumuco and Coalcoman.

In Guerrero.—Tasco, Tehuilotepec, Juliantla, Huítzuco, Limon, Ajuchitlan, Tepantitlan and Coronilla.

In Morelos.—Huautla.

In Puebla.—Tetela del Oro, La Preciosa, Chiautla, Epatlan, Tecomatlan and Chietla.

In Veracruz.—Tatatila and Zomelahuacan.

In Oaxaca.—Ixtlan, Villa Alta, Teoxomulco and Peras.

To the names of the preceding mineral districts we must add those which are situated in the states of Coahuila, Nuevo

Leon, Tamaulipas and Lower California, and which are situated outside of the zone already spoken of. Amongst these may be mentioned the Sierra de Jimulco, Sierra de Homes, Sierra Mojada and others in Coahuila; Iguana, Montanas and Minas in Nuevo Leon, those of the Sierrra de San Cárlos and Sierra de San Nicolás in Tamaulipas; El Triunfo, San Antonio Cacachilas and El Boleo in Lower California.

These data show that out of the two principal branches in to which the Gran Cordillera is divided, the western is very much superior to the eastern in metalliferous deposits, so much so, that many authors have declared that the day which sees these magnificent deposits worked with the necessary amount of capital and intelligence, the results will be really wonderful, especially in the opulent region included in the States of Sonora, Chihuahua, Durango and Sinaloa, not to speak of the virgin ranges of Michoacan and Guerrero.

Before treating of the interesting branch of mining with respect to each one of the states of the Mexican Confederation, it would be well to give the reader a sketch of the mining law which came into force on the 1st. of July 1892.

According to the provisions of that law the native or mineralized substances which come under its action are: gold, platinum, silver, mercury, iron, lead, copper, tin, antimony, nickel, cobalt, manganese, bismuth and arsenic, as well as precious stones, rock salt and sulphur.

Without any necessity of demanding special permission, but always in subjection to the general regulations as to the management and security of the mines, the owner of the soil is allowed to freely work the following substancies: iron from the swamps and streams, ochres that are used for coloring, stream tin, combustible materials, oils and mineral waters, building and ornamental stones, earths, sands and clays of all classes, and generally all substances which are not specified in the preceeding paragraph.

The same law guarantees the ownership of the mine in per-

In Sinaloa.—Guadalupe de los Re
Alisos, Joya, Cosalá, Pánuco, Copal
In Durango.—Sianori, Indé, El
nelas, Gavilanes, San Dimas, To
Corpus, Comitala, Durango, Cu
and San Juan de Guadalupe.
In Zacatecas.—Zacatecas, V
Plateros, Potrero, Mazapil, Fr
Sombrerete, Pinos, Chalchih
In Aguascalientes.—Asi
In Jalisco.—Bolaños, H
tancia, Cuale, San Sebas
In San Luis Potosí.—
de San Pedro, Bernalejo
In Guanajuato.—La
Monte de San Nicolás,
San Bruno, Joya, Mej
San Pedro de los P
In Querétaro.—La
In Hidalgo.—P
Zimapan, Jacala,
Rosa, Capula, an
In México.—A
Cristo and Zac
In Michoa
guaran, Chur
In Guer
mon, Ajui
In Mo
In Pu
Tero
In

of Federal taxes
Fomento, the
under ground
to be the pro-
the law provi-
ed for the mining
owner and the miner
area that is required,

scribed to fixed limits
not already appropriated,
ovides for the working of
under agreement with the
from the mines belong to
ect to the provisions of com-
s of the proprietor of the land

placers is considered a busi-
and required for them can be ac-
ement, by forcible expropriation.
ery inhabitant of the Republic, the
lands for mineral deposits, only
tify the nearest agent of the Depart-
undertake explorations in private
proprietor is first required. In case
can be solicited from the agent above
same time the name of some respon-
answer for the damages that may be
tion, to the surface proprietor.
annot be carried on within the limits of
fortifications and public edifices, neither
in private buildings or their dependen-
ous permission of the owners.
will consist of all the earth to an indefinite
the surface to a horizontal square of a

hundred metres on each side, the interior limit consisting of the corresponding vertical planes as far as the miner chooses to go. On free ground, that is to say, ground not already taken up, the miner can take one or more setts to suit his convenience.

The Agents of the Department of Fomento, in the States, Territories and Federal District, are authorized to receive fees, receive and publish the petitions for mining concessions, order the measurement of the setts and forward to the Department of Fomento copies of all the papers on the subject, for the approval of the Department and issue of the title, and once this is issued the miner enters into possession of his setts without any other formality.

This mining law prescribes the proceedings which are to be observed by these agents in cases of opposition.

The concessionaires will enjoy full liberty in the works that they undertake, whatever may be the number of their laborers, the system of payment, extraction, drainage and ventilation; but with respect to the order and security of the work they are subject to the regulations, and to penalties imposed for their infraction.

For the payment of fees to the Agents of the Department of Fomento, in all mining matters, the following tariff has been established:

I. For the notes on the notification or on the permit to make explorations, referred to in Articles 10 and 11 of the "Regulations for the Administrative Proceedings in Mining Business," and for the filing of the same, one dollar.

II. For entering and for the certificate of permission to explore as referred to in Article 12th of the same regulations, two dollars.

III. For the registry of each petition for a mining concession or the amplification or rectification of mining setts, and for filing the same, one dollar.

IV. For the notifications, and copies of documents, at the rate

of twenty cents for each ten lines or fraction of the same, with ten cents additional for the revision of each one of the leaves contained in the documents which are to be copied.

V. For the writing, comparison and authorization of the copies, certificates and other documents, at the rate of one dollar per each hundred lines or fraction of the same.

VI. For the searching of all classes of documents in the archives, one dollar.

When the interested party cannot give sufficient data and it is necessary to examine documents corresponding to more than one year, one dollar for each year so examined.

VII. For each kilometer going and coming, in the practise of any service, twenty five cents.

VIII. For an ocular or outside inspection, with the corresponding report, five dollars.

IX. For ocular inspections or visits below the surface, five dollars for each hundred metres of depth or fraction of the same in which the workings may be, and five dollars for the corresponding report.

X. For attendance at meetings which do not exceed one hour, three dollars, and for each additional hour or fraction of the same, one dollar.

The Federal taxes which have been above mentioned consist of two parts; one which is paid on one sole occasion, in the form of stamps which will be affixed to the title to property in the mine, and the other which has to be paid annually for each sett in the concession.

The stamps which have to be affixed to each title, amount to ten dollars for each sett or fraction of not less than a half a sett.

The second part of the Federal tax consist in a payment of ten dollars per annum for each sett, and must be paid in the stamp offices every financial year, in third parts before hand, that is to say before the 31st of July, the 30th of November and the 31st of March.

If the proprietor allows the time to pass, as specified by law for each payment, and pays in the second month, he will be liable to a penalty of 50 per cent on the original tax, and if he pays in the third month the penalty will be equal to the value of the entire tax. Once he has allowed the last period to elapse without making the payment with the penalties added, the miner loses all property in the mine without any further appeal.

The causes of forfeiture and loss of property in a mine, according to the former Mining Code were three, whilst the present Code only specifies one. These cause were: The bad condition of a mine which rendered it dangerous to the workmen employed, threatened the ruin of the workings or prevented the investigation and working of the deposit; the want of ventilation in the workings, and lastly for not extracting the waters which prevented the continuation of the work, within a specified time.

These are the principal points of the Mining Law and of the taxes which are levied, but every person who desires to enter into that business in this country ought to provide himself with copies of these laws and of their respective regulations, so as to acquire full information on the subject.

NORTHERN REGION.

Lower California.

The Peninsula of Lower California is traversed from north to south by a range of mountains more than 1,500 kilometers long, and which closely approaches the eastern coast, presenting a specially arid appearance which is in strong contrast with the few valleys which it contains, remarkable for their fertility. The central part of the range generally consists of a granite formation, and volcanic rocks predominate all through the range, giving the whole Peninsula an igneous appearance. The volcano of Las Vírgenes, situated in 27° 30′ N. latitude appears to have been the center of the former volcanic acti-

vity. These rocks are trachyte, trapp, basalt and others, and these have taken a stratified form which can be observed along the coast of the Gulf from La Paz to Loreto, and wherever these are broken we find the breach filled with pumice stone.

The sulphates of lime, especially those which exist in great masses near Mulegé, are related to the volcanic formations, and the same happens with the numerous springs of selenite and magnesia which form abundant deposits in different parts of the country.

In Lower California the range which traverses its greatest length, presents on its western slopes, the schists which are associated with the gold placers, and in certain regions of the eastern slopes we find metalliferous porphyry with veins of argentiferous ores. In the districts of San Antonio and El Triunfo, to the south of La Paz, a group of mountains rises containing veins of silver and other substances which have been classified as follows:

Decomposed black ores.–Gray silver, plumbago, gray antimony, galena, prismatic and common arsenical pyrites, native sulphur.

Red colored ores.—Chloride of silver, oxide of antimony and lead, carbonate and phosphate of lead, hydroxide of iron, carbonates and hydrosilicates of copper.

In the districts of Las Vírgenes and Cacachilas, to the eastward of La Paz, there is another group of mountains with metalliferous veins, which contain:

Near the surface; clorides and bromides of silver, sulphureous and virgin silver.

At a greater depth; gray copper or black silver ores, silver bearing galena and carbonate of copper.

Besides these, are found spread over the surface loose waterworn rocks proceding from veins in the neighborhood and containing an abundance of horn and sulphureous silver.

In the Municipality of Todos Santos are several mines of silver, copper and lime.

In that of Santiago, there are mines of gold, silver, copper, chalk, coal, sulphur and lime.

In that of San José del Cabo there is one silver mine.

In Mulegé, the mines are gold, silver, copper, lead, marble, chalk and sulphate of lime.

In Comondu, are found gold, silver, copper, chalk and lime.

In that of Santo Tomás, sulphur and gold.

In the Mineral District of Santa Agueda, Municipality of Mulegé, there are rich copper mines, the annual production of which has been calculated at 6,000 tons.

Copper is very abundant in many other places in the Sierra, as well as in the old Mission of San Fernando.

Besides the gold veins, there are many placers, especially in the Real de Santa Cruz, to the South of San Antonio, in Gallinas, San Rafael, and in some streams at the foot of the Sierra near Mulegé and in the Northern parts of the Peninsula.

The most important mining district in Lower California is that called El Boleo, situated in the Municipality of Mulegé, and divided in three groups which are called, La Providencia, Purgatorio, and Soledad.

During the years 1891 and 1892 the works in these mines were advanced 15,240 metres in the three groups, and the Company possesses a net of servicable galleries extending over 40,418 metres, in which there are 28,110 metres of railway laid. The area that is excavated amounts to 35,934 square metres, which produced 88,660 tons of ore containing 6 to 12 per cent of silver.

In order to push the works of these mines, the Company has made use of the Guillat drills, which do very good work and facilitate the excavation of the drifts and ventilating shafts.

The number, of days work paid for during the year, came to 231,494 with a value of $ 331,742 30, giving an average day's wage of $ 1 44, without taking into account the salaries of the chief employes, the accountants and captains of the mines.

The centre of the work is in the group of mines called the

Providencia, near which is an office communicating by telephone with all the others, the Santa Rosalía service and the General Management.

In the Purgatorio group and in the mine called La Ley, the operations are carried on by means of a tramway 300 metres long which runs out of the tunnel, and terminates outside on a dump with a slight inclination, and from there is connected by means of a double tramway with large warehouses having a capacity for 400 to 500 tons of ore.

The Humboldt mine is also in regular working order, and has a tramway from the entrance which allows the ore and rock to be carried out to the dump. Its capacity is equal to the above mentioned mines and it contains some very rich ores.

In the Soledad Group, the mine called San Luis is operated in a thorough workmanlike manner, being well provided with all the necessary shafts, ventilators, steam engines, and everything that is required for the efficient working of a mine.

The company sustains six schools in different parts of the Santa Rosalía District, two of which are for boys, two for girls and two mixed.

One of the important offices of the Santa Rosalía mines, is the smelting works, in which during the year mentioned they treated 84,400 tons of ore, assaying 7.5 per cent. These produced 5,770 tons of base bullion, 66 per cent pure and 1,427 tons of black copper 92 per cent pure.

In the same year the consumption of coke amounted to 14,350 tons, or 17 per cent of the ore treated.

The company loads and unloads on the wharf in the Port of Santa Rosalía, with 13 wooden lighters of 20 tons capacity, which are towed by 7 boats to the vessels in the harbor.

The population of the town of Santa Rosalía is divided as follows:

	ADULTS.		CHILDREN.		
	Men.	Women.	Boys.	Girls.	Total
Santa Rosalía.....	726	531	288	275	1,820
Providencia.....	365	222	152	177	916
Purgatorio.....	316	163	97	101	677
Soledad.....	469	224	107	97	897
	1,876	1,140	644	650	4,310

The wages paid in Santa Rosalía during the same period, were for 115,488 working days with a value of $ 211,032, giving an average wage of $ 1 82.

The mining agents established in the Territory of Lower California, have jurisdiction over the following districts:

La Paz. The entire district to the south of the port with the exception of the Sub Prefecture of the center. Residence of the agent, the port of La Paz.

Northern District, including the Island of Cedros. The residence of the agent is Ensenada de Todos Santos.

Mulegé. Central district including Los Angeles. Residence of the agent Mulegé.

SONORA.

The State of Sonora is one of the most important in the Republic, with respect to its mineral riches, and for the variety and high grade of its ores, which include gold, silver, quicksilver and iron. These are found in various forms, such as nuggets, dust and veins. Lead ores are very abundant in this State and form an excellent flux for smelting. Many other mineral substances are found, such as asbestos, caparosa, fine marbles, alabaster, jasper of various colors, flint, load-stone, muriate and carbonate of soda. Enormous masses of virgin iron and large veins of the same metal are found in different points of the Sierra Madre, in the Papagueria, and in the immediate neighborhood of the River Colorado.

The Sierra de Antanes, between the rivers Sonora and Horcasitas, and the mountains of Tonuco and Guadalupe are re-

markable for the abundance of copper ores found in them, all contaning more or less gold.

Lead ores ore found in great abundance in Aguacaliente, Alamo Muerto, Papagueria, Arizpe and Cieneguilla.

Sulphate of iron is found in large quantities in San Javier, San Antonio de la Huerta, Cieneguilla and Aguacaliente.

Gold and silver constitute the principal mineral products of this State, being principally mined in the districts of Altar, Magdalena, Sahuaripa and Alamos. The gold placers in San Francisco de Cieneguilla, Quitovao, San Antonio, Sonoita, El Zoñi, La Basura, San Perfecto, Las Palomas, Alamo, Vado Seco and others are at times so rich as to produce real bonanzas.

The general productions of the mining districts in the State of Sonora are as follows:

In Hermosillo: silver, gold, lead, copper, salt, alum and marbles.

In Guaymas: gold, silver, copper, salt, lead, iron, alum, sulphur and marbles.

In Ures: gold, silver, lead, tin, iron, lime, chalk, rock salt and topazes.

In Arizpe: gold, silver, lead, tin, nitrate of potash, rock salt and marbles.

In Altar: gold, silver, copper, iron, salt, sulphur, carbonate of soda and marble.

In Alamos: gold, silver, copper, lead, iron, antimony, sulphur, rock salt and marble.

In Sahuaripa: gold, silver, copper, lead, iron, tin, sulphur and antimony.

In Oposura: gold, silver, copper, lead, nitrate of potash, lime, chalk, amalgatalite and marbles.

Monsieur Charles B. Dahlgren, in his treatise on historical mines, mentions 148 Mineral Districts, but the mining districts which take the first place in the State of Sonora are those of Magdalena and Alamos.

The new district of Alamos includes the important groups of

Alamos, Promontorio, Aduana and Minas Nuevas and embraces an area of 8 leagues containing innumerable mines, some of them being old workings and others new; but the large catalogue of registered mines is daily increased. Amongst the richest mines of this district we have the following:

La Quintera, in the district of Aduana, which, united to those of Zapopan and Santa Ana possesses an area of 121,422 square metres. The veins run from North to South, with a width that varies from 10 to 50 metres. The ores are argentiferous, in white quartz and blue slate, and the assays run from 5 to over 1,000 ounces of silver per carga of 300 pounds. The system of reduction which has been adopted in the works called "Dios Padre," is that of lixiviation and smelting.

La Valenciana in the district of Promontorio, has an area of 800 metres in length by 160 in width. Its vein, which has a width of 1½ to 3 metres, runs from North to South with an Easterly dip of 15°. It produces argentiferous ores in abundance, which assay from 4 to 9 ounces of silver per carga of 300 pounds. The formation of the vein is black quartz and calcareous spar. The system of reduction is by concentration and by amalgamation of the taillings.

The mine of *Tepustete*, is situated on the Cerro de la Cal in the Rancho de Las Lomas and in the Municipality of Minas Nuevas. The vein has a width of from 5 to 15 metres, and runs S. W. and N. E., producing iron and lime. The mine has four continuous setts, each of which is 200 metres square.

San José, *Santa Rosa* and *La Barra*, are mines belonging to the district of Promontorio. The vein on which they are situated has a width that varies from 20 centimetres to 1 metre, and produces a greenish black silver ore in white quartz and calcareous spar. The assays run from 4 to 500 ounces of silver per carga.

The mines of *Providencia*, *Balvanera*, *Dios Padre* and *La Virgen*, have an area of 510,647 square metres. The three veins, Guijas, Veta Grande and Veta Chica, run in almost parallel di-

rections with a bearing of North 12° East and with an average dip of 12°. Their respective widths are 2, 3 and 10 metres and the formation consists of calcareous rocks, feldespar and porphyry, the hanging walls being of granite and porphyry. The matrix is quartz and the ores are a compound of lead, copper, iron and zinc which assay 3 to 5 ounces per carga of 300 pounds, whilst some few specimens will go as high as a 100 ounces with a fair color of gold. The system of reduction employed, is that of lixiviation and smelting.

The mineral zone of Cerro Blanco in the district of Magdalena, is of great importance on account of the large number of metalliferous veins which it contains, with abundant ores, of silver and gold. This zone, which is situated in the Municipality of Imures, forms a parallelogram with a length of 22 kilometres and a width of 20, including within that area a great number of mines and the gold placers of Cañada de Oro. The ores which are now worked, are copper, and they are found associated with silver and at times with native gold. These ores are concentrated for exportation.

The Department of Fomento has nine agents in the State of Sonora, each of whom has jurisdiction over a district and resides in the central town of the same.

STATE OF CHIHUAHUA.

The great Sierra Madre which forms the boundary between the States of Sonora and Chihuahua, constitutes one of the most remarkable regions in this country for the abundance and richness of ifs ores, and the mines in this State are continually increasing in importance. The numerous mining districts existing in the State, produce gold, silver, argentiferous galena, auriferous sulphurets of silver, malachite and argentiferous azurite. Quicksilver is found in the Municipalities of Rayon and Matamoros; copper in Jiménez, Iturbide, Galeana, Vic-

toria and Rayon. Coal is found in Meoqui, Aldama, Bravos and Galeana. Iron is found in Matamoros, Galeana and Jiménez. Lead is found in Iturbide, Galeana, Victoria and Rayon.

The minerals which are at present worked in the State of Chihuahua, are as follows:

DISTRICTS.	NAME OF MINES.	Number of mines.	ORE.
Iturbide	Santa Eulalia	21	Silver.
	Hacienda del Torreón	6	Copper and silver.
	Ojinaga	2	Silver.
	Sierra de Minillas	1	„
	Guadalupe y Calvo	1	Silver and gold.
Mina	Refugio	1	Sulphuret and Chloride of silver.
	San José de Cruces	1	Argentiferous galena.
	Durazno	1	Sulphuret of silver.
	Sierra Mojada	1	Sulphuret of auriferous silver.
	Dura	1	Quartz, free gold.
	Tenoriba	3	Quartz, free gold, malachita, sulphuret of silver and galena.
	Potrero	1	Malachite, argentiferous azurite.
	Morelos	15	Native and sulphureous silver, rosicler.
	Charcas	4	Native and sulphureous silver, argentiferous grey copper, argentiferous galena.
Abasolo	Cusihuiriachic	9	
	Gaviliana	5	Not stated.
	Carichic	1	
	Nonoava	1	
Guerrero	Jesus María	7	Gold and silver.
	Moris	4	„ „
	Uruachic	3	Silver.
	Pinos Altos	1	Silver and gold.
	Yepachic	1	Silver.
	Candameña	1	„
	Yoquivo	2	Silver and gold.
	Cármen	1	Silver.
	Mahuarich	1	„
	Batuchiquic	1	„
Hidalgo	Parral	4	„
	Minas Nuevas	7	„
	Santa Bárbara	5	„
Camargo	Sierra del Carrizo	6	Silver lead.
	Sierra Naica	6	„ „

DISTRICTS.	NAME OF MINES.	Number of mines.	ORE.
Camargo	Peña Gorda	1	Silver lead.
	Agua Zoquete	1	„ „
	Encinillas	1	Copper.
Andrés del Rio	Batopilas	8	Native silver and gold.
	Cerro Colorado		
Arteaga	Urique	2	Silver, gold.
	Guazapares	3	Silver.
	Realito del Cármen	1	„
	Uruapan	4	Silver and gold.
	Topago	2	„ „
	Palmarejo	1	„ „
	Chinipas	8	„ „
	Barranca del Cobre	1	Copper and gold.
Bravos	Corralitos	1	Silver.
	Sabinal	6	Silver and gold.

There are 46 mineral districts and 160 mines opened. The methods employed for the reduction of ores are: smelting, lixiviation, "patio" and pans.

The mineral districts which at present attract most attention are those of Batopilas and Cerro Colorado.

The ancient and celebrated mining district of Batopilas in the municipality of Andrés del Rio, is situated on the right bank of the river of the same, which is an affluent of the Rio Verde that later on forms the Rio del Fuerte. This district is situated about 500 kilometres to the S. W. of the City of Chihuahua and at an elevation of 702 metres above the sea.

According to the reports given by Mr. Alexander A. Shepherd the principal veins are in a formation of diorite surrounded by porphyry, which extends for a distance of 5 miles. More than a hundred veins are found cropping up on the surface of the ground, containing silver under various forms and conditions, and assaying from a few ounces up on 25,000 ounces per ton.

The silver which is found in a native state is very capricious in its forms, and is sometimes discovered in spikes or thick wires which hold together the matrix of the vein, at other times in tangles of very fine wire, in thick or thin slabs or in solid pieces of pure silver wich require to be cut with a chisel so as to be able to smelt them in a crucible without any necessity

of previous treatment. These mines also produce rich sulphurets of silver, such as rosicler and black silver.

The mining zone of Batopilas in divided into 44 sections, each of which measures 2,000 metres square, and the workings were commenced in a thoroughly scientific manner during the year 1889. The explorations carried out since that period have resulted in the discovery of 224 veins.

The system of reduction which is employed in the magnificent works at San Miguel, which are the principal in the State, is that of lixiviation.

Cerro Colorado.—This interesting gold formation is situated at a distance of 12 kilometres N. of Batopilas and 250 from the City of Chihuahua. Its elevation above the sea is 700 metres, whilst the Sierra that surrounds it reaches an elevation of over 1,500 metres.

According to the reports presented by the Enginer M. Fleury, the hill of Cerro Colorado measures 1,500 metres in length, 1,000 in width and 500 in altitude. The porphyritic rock of which it is formed is generally soft and is accompanied by white, green or blue magnecite. Sometimes it is found hard and contains oxide of iron, hematite or iron crystals very full of pyrites. The gold is found in a native condition, it is excessively fine, has an opaque color and forms veins or masses, which often reach a large size.

The rich ores, which often assay over $2,900 per ton, are found iu a matrix composed of the above mentioned green or blue magnecite. The pyrites are generally of a low grade which will not pay to work, and it appears that the native gold proceeds from the alteration or concentration of these under the chemical influence of the atmosphere.

The formation of the vein is very regular, and the ore presents itself in excessively rich pockets or bunches, in free gold or in long stretches of clay which are either poor or barely pay expenses.

The average returns from the ores of Cerro Colorado, ac-

cording to the experience acquired, are found to give them a value of one ounce of fine gold per ton of 2,000 pounds.

The ores extracted from these mines are treated by the amalgamation system in the New Australia reduction works, which the Company has established at a distance of three kilometres to the S. E. of the Mine of San Gabriel, that being the principal mine held by it.

The new mining agents appointed by the Department of Fomento for this State. reside in Chihuahua, Ciudad Guerrero, Santa Rosalía, Cusihuiriachic, Parral, Mineral de Ocampo (District of Rayon), Guadalupe y Calvo, Batopilas, Chinipas and Ciudad Juárez or Paso del Norte, the jurisdiction of each extending over the districts of which these towns are centres.

The mineral district of Guazapares is one the most important is the State of Chihuahua. Its mines are situated at a distance of 2 kilometres to the eastward of the town which bears the same and whieh is the capital of the distrrict of Arteaga. It stands on the slopes of the great Sierra Madre at an elevation of 7,000 feet above sea level.

The geological formation of alternating series consist of trachite and porphyritic rocks, which frequently take the form of conglomerates on account of the quartz which they contain mixed with pheldespathic rocks.

The group which is called Carmen Mines, is situated on a low chain of hills, and contains the foltowing veins: Carmen and Santa Julia with their veins branching off in different directions. Their ores whose matrix consists of quartz associated with aluminium, magnesia and calcareous spar, are of native silver and sulphurets accompanied by iron and copper pyrites and occasions ally by lead ores. They are treated under the pan system in the reduction works close to the mines.

The Mine of San Antonio is one of the most interesting for the abundance and high grade of its ores.

The Mine of San Luis generally produces lead ores in the upper workings and amalgamating ores in the lower.

San José is a very important mine, on account of the great width of its vein, the high grade of its ores and the abundance with which they are produced.

Santa Clara was in former times very largely worked, and still produces sulpherets of silver with iron pyrites. The second group is formed of the veins of Batosegachic, San Miguel, San Francisco, La Libertad, San Juan and Rosario, all containing argentiferous ores; such as, rosicler, chlorides and sulphurets accompanied by pyrites ano galenas.

In Hidalgo del Parral we have the important mineral zone of San Juan Nepomuceno, situated in the Sierra Madre at a distance of 15 leagues to the N. W. of the chief town of the district. It contains rich veins of gold, silver, copper and galena, worked in twenty five mines.

COAHUILA.

The Sierra of Ramírez has at times produced large quantities of silver, and its principal mines are Esmeralda, Calavera San Acacio San Juan and Valenciana, which have given large returns to their owners.

Large deposits of virgin iron have been found in the Sierra of Santa Rosa and in other parts of the State, besides which we have lead and copper in Guadalupe, asbestos in the vicinity of Viesca and Monclova, nitrate in San Blas District of San Buenaventura, copper and iron in the Sierra de Patos, silver ores in the Sierra de Candela, sulphur and caparrosa on the slopes of Gigedo.

The important points where mining is carried on at the present day in the State of Coahuila, are Sierra Mojada, Sierra del Cármen and Sierra de Santa Rosa. To give an idea of what these districts are, we cannot do better than copy the report of the Governor of this State, published in December, 1891.

REPORT OF THE GOVERNOR OF COAHUILA, ON THE MINING INDUSTRY IN THAT STATE.

Government of the free and sovereign State of Coahuila de Zaragoza.—To the Secretary of State and the Department of Fomento.—México.

Under to-day's date I write as follows to the Secretary of the Treasury and Public Credit:

"In answer to your communication Nº 1368, dated 3rd. inst., I have the honor to inform your Department with respect to the situation of this State in the important branch of mining industries.

In the flourishing mining district of Sierra Mojada, there are the following mines at present in work; "San José" producing ores with an average assay of 12½ ounces of silver per carga of 300 pounds, and occupying 300 men in the offices and mines. The amounts paid for salaries and wages reach the sum of $20,000 per month, and the annual product of the mine is 257,631 cargas.

"San Salvador," which is the property of the "Constancia and Parreña Companies," yields an ore averaging 3 ounces of silver per carga, it occupies about 450 people in the offices and mines, with salaries that amount to $25,000 per month, the annual product being 251,627 cargas.

"La Esmeralda," "Providencia," "Dionea and Santa María de los Angeles," belong in the Constancia Co. and the ores produced by them have an average assay of 130 ounces of silver per ton of 2,000 pounds. the greater part of them being exported to England. These mines occupy 13 men in the office who earn $5,740 in the year, and 500 laborers who earn $15,000 per month, the product being 35,000 cargas.

"Veta Rica," "El Porvenir," and "San Patricio" were only opened on the 18th of September of the present year; up to date the result has been 200 cargas of ore with an average assay of 16 ounces of silver per carga. The mines occupy two

men in the office and 84 laborers at an expense of $ 2,469 per month.

"La Fortuna," belongs to a Company of the same name and has an annual production of 8,150 cargas, with an average assay of 3 ounces of silver per carga; it employs 44 laborers who earn a total of $ 720 per month.

There are five reduction works for the treatment of ores.

The works of the «Compañía Constancia» in which $ 500,000 have been invested in machinery, buildings and offices.

"El Fénix," which is the property of Don Dámaso Rodríguez who has spent $ 3,000 in the construction of the building.

"Dolores," belonging to Mr. Ismael Galan, represents a value of $ 2,000.

"San Nicolás," belongs to Mr. Nicolás Villareal and is valued at $ 500.

The rich mining District of Sierra del Carmen and Sierra de Santa Rosa in the Municipality of Múzquiz is not of less importance or of less promise to the State of Coahuila.

In the first district the mine called "La Fronteriza" is of very great promise, its ores carrying an assay of 50 to 500 ounces of silver per ton, which are treated under the patio process.

It occupies 50 laborers who earn a dollar per day, and its annual product is 1200 tons of ore. The machinery employed in the treatment of these ores can be considered as the best in the State, its mechanism being so thoroughly well organized that the ore can be introduced into the proper parts of the machinery, and be received within 24 hours converted into the finest and purest silver which up to date has been seen in the different mining districts of Coahuila. The Company has invested in this machinery the sum of $ 50,000.

The following mines are also being worked with the most magnificent prospects: "La Reina de las Lomas," "Abundancia," "Guevrendolen," "Bonanza," "Providencia," "Oso Grande," "Caballo azul," "Monte-Cristo," "Concordia," "El Rubí," "Porfirio Diaz" and "Las Mercedes."

In the second locality that I have above named, we have the "Cedral" mine belonging to Murdock and Co., which produces 1,500 tons of ore per annum, assaying from 2 up to 96 ounces of silver per carga; it employs 60 laborers who earn a dollar per day and the capital invested in the business amounts to $ 50,000.

"Santa Gertrudis," is being worked by Messrs. Becker and Co., occupies 25 laborers with the same wages as the last and has a plant that cost $ 25,000.

"La Luz" is the property of a Company which bears that same name, its ores assay 56 ounces of silver per ton, and 56 per cent of lead; the annual production is 500 tons, and the number of laborers and wages the same as the last.

"San Juan and San Miguel" are two mines belonging to Messrs. Murchall and Co., their ores assay 96 ounces of silver per ton, they employ 100 laborers and have a capital invested of $ 25,000.

The Consolidated Mining and Smelting Company of Santa Rosa, is operating 30 mines which have been conceded to it, and amongst these we find "La Bonita," "La Zona," "El Cuarteron" and "Rosario."

The construction of the smelter was commenced in the month of August last and occupies 200 men.

In the Municipality of Romero Rubio and in the Sierra de Pánuco a mine is being worked by the "Candela Mining and Smelting Company" with an extraction of 7.176,100 pounds of copper ore which contained 25 per cent of copper, and giving continuous employment to 90 to 100 men.

The mining industry is looking especially prosperous in the jurisdiction of Cuatro Ciénegas; amongst others the "Reforma" mine produces 150 tons of ore per month with an assay of 5 marks of silver and 125 pounds of lead per carga, giving occupation to 107 laborers.

Other mines in active work are, "El Barril," "La Paz," "San Márcos" and "Estrella."

In Jimulco which is situated in the Municipality of Viesca, the mines most favorably situated are: "La India," "La Sultana," "La Noche Triste," "La Casita," "El Alférez," "La Candelaria" and "La Providencia," all of which give valuable assays. The ores extracted from these mines include silver, copper and gold, lead, antimony and iron.

In the Municipality of Saltillo, two mines are being worked, called "Los Placeres" and "La Ventura." At present, they are not doing any more than dead work in the mines, but their ores are known to assay from 4 to 5 ounces of silver per carga.

The State of Coahuila also contains a powerful scource of riches in its immense coal fields, which extend over a considerable zone within its territory and are being operated with very handsome profits.

In the Municipality of Juárez the "Alamo" mine is being worked at a place called San Felipe, and its coal supplies most of the fuel used in the Mexican International Railroad. The output is 35,564 tons per annum, and it occupies, between officers and laborers, 300 men who earn from 75 cts. up to $4 per day.

Another coal field is being worked in the Sierra de Santa Rosa, in the Municipality of Múzquiz, and its coal is employed in the Cedral mine.

Of no less importance are the rich coal beds of Sabinas and Guerrero, the first of these districts containing the "Hondo" mine which is being worked by a foreign Company and has a monthly output of 4,800 tons of coal.

NUEVO LEON.

The Sierras of this State contain an abundance of metalliferous veins, of which some of the most famous are the "Iguana," and those found in "El Potrero," and the mountains to the South of the town of Bustamante. The mineral productions of this State may be stated in general terms as: silver, lead, copper, cinnabar, iron; and in the town of Bustamante: sulphur,

nitrate of potash, different varieties of sulphate of lime (chalk, selenite and crystals), carbonates of lime (alabaster and marble), and extensive beds of muriate of soda.

The mines at present being worked in the State, are the following: In the Monterey district,

5 of lead ores in the Sierra Madre.
6 „ „ „ in the Cerro de la Mitra.
1 „ „ „ in the Loma Larga.
1 „ „ „ in the Cerro del Topo.
1 „ „ „ in the Hills of the Urdiales.
1 „ „ „ in the District of San Pedro.

15

In the Municipality of Cerralvo.

13 of lead ores in Potrero del Naranjo.
1 „ copper ores in the same.
17 „ lead ores in Potrero de Urías.
1 „ „ „ in Potrero de Magueyes.
1 „ „ „ in Potrero de Reyes.
1 „ „ „ in "La Loma del Vinatero."

34

In the Municipality of Mina.

2 of lead ores in the Cerro de Enmedio.
1 „ „ „ in Potrero del Aura.
1 „ „ „ in Potrerillos.

4

In thc Municipality of Villaldama.

10 of lead ores in Minas Viejas.
3 „ „ „ in Montañas.

13

In the Municipality of Aramberri.

2 of copper ore in the Cerro del Cuervo.
1 „ „ „ in the Cerro de la Peña.
1 „ „ „ in the Cerro de San Juan.
1 „ lead ore in the Cerro Colorado.

5

In the Municipality of Sabinas Hidalgo.

3 of silver and argentiferous lead in the Mesa Mediquena.
1 „ „ „ „ in La Loma de la Iguana.

4

In the Municipality of Agualeguas.

3 in Potrero de la Parra.
1 in Cerro de la Escondida.

4

In the Municipality of Garza García.

3 of lead ore in the Cerro de las Mitras.

In the Municipality of Vallecillo.

1 of lead ore.

In the Municipality of Aramberri.

6 of lead ore in the Cerro del Dulce Nombre.

In the Municipality of Santa Catarina.

2 of argentiferous lead in the Sierra de Ventanas.
1 „ „ „ in the Cañon de Ballesteros.
1 „ „ „ in the Cerro de las Mitras.
1 „ „ „ in the Cañon de Santa Julia.
1 „ „ „ in the Cerro de Enmedio.
1 „ „ „ in the Cañon de San Pablo.

7

In the Municipality of Santiago.

6 of lead ores in the Sierra Madre.
1 „ „ „ in the Cerro de la Silla.
5 „ feruginous ores in the Sierra Madre.
1 „ saltpeter in the cave of the Cañon de la Boca.

13

Besides the above there are many other mines in the Municipalities of General Escobedo, Allende, Salinas Victoria, and El Cármen, the class and quality of whose ores are not given in the official lists.

Of all these mines the following are in actual work:

13 of copper ore in Cerralvo.
1 of lead ore in Escobedo.
5 of silver ore in Santa Catarina.
1 of lead ore in Vallecillo.
1 of silver ore in El Carmen.
4 of lead and copper ores in Linares.
2 of silver–lead ores in Villaldama.
16 of lead ores in Lampazos.
7 coal beds in Lampazos.

According to the report of Mr. Martínez Baca, 30 setts belong to the Mining Zone of Minas Viejas, which is now being operated under a concession by Messrs. Blas Diaz Gutiérrez and Gaspar S. Butcher. These veins are irregular and contain carbonates and oxides of lead with a small proportion of silver, whilst in some parts they produce sulphurets and galenas accompanied by iron and silica which greatly help in the smelting of the ores.

In the mineral district of Montañas to the N. E. of Villaldama, the formations and general characteristics of the lodes are found to be the same as those of Minas Viejas although rather inferior with respect to richness. The zone is divided into 30 setts, which are also being worked under a concession by Mr. Gaspar S. Butcher and his partner.

The same concessionaires are working the mineral zone of "La Iguana," which is also divided into 30 setts. The formation is distinct from that of the preceeding zones, as it is found to contain at a very slight depth, thick ledges of slate, which is very smooth, black, compact and resistent, and between the stratification of which are found pockets of sulphureous lead ore with a matriz of calcareous spar mixed with a little quartz. The veins of "La Iguana" are generally found to be stratified."

MEXICAN GULF COAST.

Tamaulipas.

The mineral riches of the State of Tamaulipas, can not be said to have been as yet worked, although they are by no means scarce in the mineral districts.

In the ancient "Real del Pantano" which was afterwards known under the name of "Infantes" and at present by that of "Bustamante," situated to the S. W. of Ciudad Victoria, there are other abandoned mines of silver, copper and lead.

In the "Real del Borbon" in Villagran, to the N. W. of Ciudad Victoria, there are other abandoned mines of gold, silver and lead.

The Sierra de San Cárlos, which was formerly known under the name of "Riñon de Oro," on account of its extraordinary production of ores, contains veins of iron, copper, lead, silver and gold. Iron is especially abundant in all its classes, magnetic, sulphuret, carbonate and common oxide. In the Sierra Madre, at a distance of 65 kilometres to the N. W. of Ciudad Victoria, we have the mineral district of Chigüe, Rampaguala and Revillagigedo. All the mines in that district produce an argentiferous galena which forms in the matrix of calcareous spar. But all the work in this important branch of mining industry is at present limited to simple exploration.

The mineral district of San Nicolás, whicb is perhaps the most important in the State of Tamaulipas, is situated in a

mountain range between Cruillas and Burgos in the northern district.

Extensive strata of limestone are here found to be crossed by enormous masses of eruptive rocks which have dislocated the former from their original position, and which contain besides, a good deal of basaltic conglomerates with siliceous cement. The veins are very irregular and traverse the stratifications of lime. The crystalized matrixes of these veins are composed of calcareous spar, brown spar, baritina, dolomite and quartz, and their ores are almost exclusively argentiferous galena.

According to the important data collected by the Engineer Aldasoro, and repeated in the report of General Francisco Olivares, these ores have an average assay of 0.0023 of silver and 0.43 of gold without including the baser metal.

VERACRUZ.

The most important mineral district in the Eastern Cordillera of México is that of Zomelahuacan.

This mineral zone is about 20 kilometres long and 15 wide including within this extension the municipalities of Perote, Altotonga, Atzalan and Tatatila. The entire ground within this zone contains mineral, and particularly in Bordes and lower down where it is crossed by metalliferous veins, some of which are excessively wide. In different points these veins are found forming shapeless masses of ore with a good assay, which can be considered as fragments of dislocated beds. The existence of gold in the ravines of this Sierra, induces the belief that the larger valleys must contain placer formations of this metal.

The greater part of the veins are of copper ore with pockets and small veins of oxide of iron, and these contain the richest gold ore. Other veins contain lead, silver, iron and antimony with more or less gold, all these metals being mixed in different proportions, and all the veins carrying a good deal of sulphur. To the W. and N. W. of the town, distinct veins of argentiferous galena are found with a good assay, and according

to the reports presented by Mr. Vergara López from which I have obtained these details, the veins in this zone are separated from those of the surrounding country by a formation of sedimentary rocks, which on their side are limited by veins of copper ore.

This district also contains some marble quarries of a very good class.

In the country around Tenexpanoya, Tatatila and Las Minas, a great many mines have been opened on the above mentioned veins of argentiferous galena, gold, auriferous and chalco pyrites, which give a very fair assay of gold.

TABASCO.

In the mountains between the districts of Macuspana and Tacotalpa, and particularly in the place that is known as Punta de Piedra, a coal bed has been found which as yet has only been very superficially prospected. Another bed exists in the Rivera de Chiquiguao at a distance of 7 leagues from the capital of the State. Samples of these have been submitted to the distinguished mineralogist D. Santiago Ramírez, and by him pronnounced to be common lignite. The following is the analysis:

Fixed carbon	45
Humidity	12
Volatile and combustible matters	35
Ash	8
	100

In the river of Istacomitan near a place known by the name of Calzada, as well as in Tierra Colorada between San Juan Bautista and Macuspana, extensive peat beds are found.

Petroleum is found on the surface in the neighborhood of San Fernando, and it presents itself in open wells which have been sunk for the purpose, in the form of a greenish fluid similar to that of Pensylvania. An analysis which has been made of this oil gives it 50 per cent of illuminating oil.

In several places such as El Tortuguero to the S. of the town of Macuspana, almost pure naptha is found accompanied by a gas of a highly inflamable nature, and the district shows every sign of a large extent of oil formation, which, when taken in conjunction with the similar formation found at the foot of the Sierra forms a large zone producing this important combustible.

CAMPECHE AND YUCATAN.

The peninsula of Yucatan is of very slight importance with respect to mining, and particularly with respect to metalliferous formations, although some are said to exist in the mountains of Bacalar and other points. Very possibly the want of explorations and of detailed knowledge of the country, keep us in ignorance of unknown riches. The only productions of this class of which we have any clear knowledge, are the clays, the ochre and flint of Tekax, the marble of Seibaplaya, the chalk of Tihosuco, Bacalar and Hopelchen, and especially the salt, so esential an ingredient for the amalgamation of ores, which is found to exist in abundance on the river Lagartos, Chuburna, Celestun, Punta Desconocida, Isla de Mujeres and many other points of the Coast.

MINING LAW OF THE UNITED STATES OF MEXICO.

Department of Fomento, Colonization and Industry of the Mexican Republic.—Section third.

The President of the Republic has been pleased to send me the following decree:

"*PORFIRIO DIAZ, Constitutional President of the United States of Mexico to their inhabitants, know ye:*

That the Congress of the Union has thought fit to decree as follows:

"The Congress of the United States of Mexico decrees:

MINING LAW OF THE UNITED STATES OF MEXICO.

SECTION I.

About mines and mining property.

Art. 1. Mining property in the United States of Mexico shall be governed by the following laws, and the regulations which the Executive Government will issue in accordance with its constitutional powers.

Art. 2. The present law applies to those mineral substances which cannot be worked unless a previous concesion be obtained, and those for whose extraction work is required which may put in danger the lives of the workmen, the safety of the workings or the stability of the surface.

Art. 3. The mineral substances, for working which a previous concession is required under any circumstances, are those which are hereafter enumerated, whatever be the nature, shape or situation of their respective ore bodies.

A. Gold, platinum, silver, quicksilver, iron, except marsh ores, loose surface ores and ochres which are worked as colouring matter, lead, copper, tin, except stream tin, zinc, antimony, nickel, cobalt, manganese, bismuth and arsenic, whether found in native state or mineralized.

B. Precious stones, rock salt and sulphur.

Art. 4. The owner of the ground can work freely, without necessity for a special concession in any case whatever, the following mineral substances:

The mineral combustibles, oils and mineral waters, the rocks of the ground in general, whether they serve directly or form part of materials for construction or ornamentation, the matter which forms the ground, as earths, sands and clays of all kinds; the mineral substances excepted from concession in Article 3 of this law, and generally, all those that are not mentioned in the same.

Superficial or subterraneous excavations which the working of any of these substances may require, shall always be subject to the regulations which are decreed for order and security in the mines.

Art. 5. Legally acquired mining property and that which in future will be acquired in accordance with this law shall be irrevocable and perpetual as long as the federal property tax has been paid, in accordance with the regulations of the law by which said tax is established.

Art. 6. The newly acquired primordial mining title will be given by the Department of Fomento according to the regulations of this law.

Art. 7. Mining property, except in the case of placers and superficial ore bodies, is understood to be only underground, and does not include the surface, which continues under the control of its owner, except that part of the same which the miner has to occupy in the cases and under the conditions mentioned in Art. 11 of this law.

Art. 8. The taking out of ores from a mine is completely limited by the respective boundaries of said mines and these boundaries can only be passed in accordance with the provisions of the Regulations when the ground is unoccupied, and after previous request for the respective amplification of the concession.

In order to enter into another person's sett the consent of the owner is absolutely necessary, except in cases of legal right of way.

Art. 9. The water brought to the surface and coming from subterraneous workings of mines belongs to the owners of the same, and the regulations of the common law will have to be observed in regard to the rights of owners of the ground through which these waters pass.

Art. 10. The work done for opening and utilising mines and placers is for public benefit, and therefore, in case of non agreement, the ground necessary for this object, can be acquired by forcible expropriation.

Art. 11. The mining concessionaire is free to make arrangement with the owners of the surface ground for the occupation of the surface he needs, in order either to work placer or superficial ore-bodies or to establish buildings and other mining establishments, but in case the parties do not come to an agreement in regard to extent or price, the expropriation will be proceded with through the local judge of first instance, the following procedings being observed until art. 27 of the constitution be regulated.

I. Each party shall name an appraising expert, and both experts shall present their valuation within eight day's time counted from the day they receive their appointment. If the appraisers do not agree, the judge will name a third expert as umpire, who shall give his decision within the peremptory term of eight days counted from his appointment. The judge, taking into account the opinions of the experts, and the proofs which both parties shall present to him whilst the experts are preparing their statements, shall fix the superficial extent and the amount of the indemnity within the next eight days following. The decision of the judge shall be binding and against it there shall be no other appeal but that of responsibility.

II. In case the owner of the ground which needs to be occupied does not name his appraising expert within eight days after being notified by the judge, this functionary shall officially name an appraiser to represent the interests of the owner.

III. In case it be uncertain or doubtful, who is the possessor or owner of the property which has to be occupied, the judge shall give judgement for the amount of indemnity resulting from the appraisements of the expert named by the concessionaire and the one which he himself appointed in representation of the legitimate owner, and shall make deposit of said amount in order that the same be delivered to the owner when found.

IV. The experts in making their appraisements, shall base these on the value of the surface ground, the damage which

immediately results to the property and the rights of way which are to be established on the same.

Art. 12. Mining property and other ordinary property bounding on it, shall, each in its case, have the privilege of and be subject to legal right of way as regards free pasage, conveyance of water, drainage and ventilation, and the judges shall conform in their decrees regarding the same and the corresponding indemnities, to the legislation of each State, Federal District or Territory, unless the same be modified by the following ruling.

I. The legal right of way of drainage consists: on the one hand, in the obligation which according to Art. 21 of this law the owner of a mining field is under, to indemnity the owner of another field for the damage done to him by not keeping up the drainage of the subterraneous workings, or not draining sufficiently to keep the water from flowing from one to the other; on the other hand, in the obligation which all owners of of mining setts are under, to permit the passage through their ground of tunnels or adits whose exclusive and necesary object is the drainage of one or various workings.

II. The drainage tunels, which not driven on the strength of the contract autorized by Art. 23 this law, can only be undertaken by the owner or owners of mining fields to whom the tunel is an absolute necessity.

III. In the case supossed by the foregoing clause, all the owners of mining setts which derive benefit from the drainage obtained through the tunnel, shall be obliged to pay their part of the indemnification, in proportion to the benefits received, taking into consideration the nature and the condition of the mine.

IV. The driving of a tunnel shall not be commenced without previous permission given by the Department of Fomento after hearing the opinion of the respective mining agent and after examination and approbation of the drawings, in which the direction and the section of the projected tunnel shall be detailed.

V. The paying ore, found while driving the tunnel, shall belong, in case it is encountered in lawfully conceded mining setts, to the owners of these, and if found in unoccupied ground, it shall be divided amongst the owners of all the setts which are benefitted by the tunnel, in the proportion established by the foregoing clause III.

VI. If, when a tunnel is being driven and one or more veins are discovered in unoccupied ground, a request be made for the grant of the respective setts or of the unoccupied surplus ground, then the orders of articles 14 and 17 relative to this law shall be applied, considering those who undertook to drive the tunnel as explorers, in accordance with the final part of article 13.

VII. Once the permission mentioned in the foregoing clause IV has been given by the Department of Fomento, only by virtue of a special contract can other persons but those who receive benefit from the tunnel be considered as members of the undertaking.

VIII. Whilst the tunnel is being driven in his or their respective properties, the owners of mining setts which are crossed by the drainage tunnel can appoint an inspector in their confidence, whose functions shall only extend to watching the work and giving notice to the mining agent or to the judge, as the case may require, of any abuse he may notice.

IX. In those places of the drainage tunnels, which through whatever reason do comunicate with mine workings, bars shall be put up, for the purpose of preventing its use as a passage as soon as the comunication is made.

X. Only in virtue of a unanimous understanding, expressed in a public document, between the parties interested in a general drainage tunnel in accordance with the foregoing clause III, can the tunnel be used for any other object but drainage. In this case, under penally of nullity, all particulars regarding passage or transit, indicated in the foregoing clause IX, shall be stated in the contract.

XI. The mines newly opened in places where they may be benefitted by general drainage tunnels already existing, will be subject to the provisions of clauses III, VII, VIII, IX and X.

XII. The legal right of way for ventilation consists in the obligation of every owner of mining setts to permit the owners of neighboring mines to communicate with his underground workings, so that the communication may produce as a necesary result, the ventilation which could not be obtained in other ways except at great expense.

XIII, Unless by special contract to the contrary, stipulated in a public document by the owners of the properties giving and receiving the benefit, there shall always be placed a barred grating to impede transit or passage at the boundary line of the respective properties.

XIV. When a communication, different from the one described in clause XII, actually ventilates one or more workings, neither this service of producing ventilation shall give a right to the miner who made the communication, to exact indemnity from the owners of the other workings that have been ventilated, nor shall these on their side acquire legal right of way which burdens the mining property furnishing the ventilation.

XV. If while driving workings, opened for the purposes mentioned in clause XII, paying ore be found, the provisions suitable to the case of clauses V, VI and VIII shall be observed.

XVI. The provision of clause IV shall also be observed as far as they suit the case.

XVII. All the expenses occasioned by the workings which may have to be made in order to obtain ventilation and those for keeping them in future in good condition shall be exclusively for account of the party who requested the establishment of the right of way (of ventilation.)

XVIII. For the establishment in future of a legal right of way to the benefit of one mining property and to the burden of another there shall be necessary; either, the consent of the

owner of the burdened property, stated in a public document or in a declaration signed and ratified before the judicial authorities or an administrative resolution agreed to by the interested parties, or a judicial sentence.

XIX. The owner of mining setts who wishes to acquire a legal right of way, which does not receive the consent of the party who considers himself burdened by the same, shall apply to the Deparment of Fomento which shall decide, within the space of time and with the formalities established by the Regulations, whatever it judges opportune, always hearing beforehand the dissenting party. In case either the latter or the petitioner do not agree to the administrative resolution, the right is reserved to them to apply to the respective local tribunals within the time specified by the Regulations. The decision shall be comunicated by the tribunal which gives the same to the Department of Fomento.

XX. In case the administrative decision be favorable to the petitioner and adverse to the opposing party, it can only be acted upon immediately by the petitioner giving bonds, satisfactory to the Department of Fomento for the indemnification of any damages, in case the opposing party receive judgment in his favor in the courts.

XXI. The ruling of the three preceeding clauses is applicable to all cases in which the provisions of the other clauses may give rise to judicial contests.

SECTION II.

About explorations, mining setts and mineral concessions.

Art. 13. Any inhabitant of the Republic can freely make, in government ground, explorations conducive to the discovery of mineral bodies, but if instead of borings excavations should be made, these shall not exceed ten metres in extent, either in length or in depth. No licence shall be necessary for this work, but previous notice shall be given to the respective authorities, according to the provisions of the Regulations.

In ground of private property, no mining explorations can be made without the permission of the owner or his representative. In case however, that this permission can not be obtained, it can be requested from the respective administrative authorities, who shall give the same in accordance with the provisions of the Regulations, bonds being previously given by the explorer for the damage which may be caused, to the satisfaction of the authorities, after hearing the owner of the ground or his representative.

Inside of private buildings or their dependencies, explorations can only be made with permission of the owner. No explorations shall be permitted inside the precints of populated places, public works, public buildings or fortifications or in their neighborhood. The Regulations shall fix in all these cases the minimum distance within which said works of investigation can be allowed.

During three months' time which can not be prorogued, counted from the date of the notice of the permission or of the administrative resolution mentioned in this article, only the explorer shall have the right to receive mining setts.

Art. 14. The unit of concession, or the mining sett (pertenencia) in future shall be a solid block of unlimited depth, defined above ground by that part of the surface which in horizontal projection gives a square with sides 100 metres long and bounded under ground by the four vertical planes corresponding to the same.

This unit of mining sett (pertenencia) is indivisable in all contracts made about mining concessions, or which affect the ownership.

Art. 15. Except as regards the final disposition of article 13 of this law, the concessions shall belong and shall always be given to the first applicant and shall embrace in all cases in which there is sufficient free ground, the number of mining setts which the interested party may ask for, but he shall clearly specify, in accordance with the dispositions of the Regulations,

the situation which the setts (pertenencias) which form his grant occupy.

In case there remain between the mining fields granted and others already existing, a space less than the unit of mining grants; this space shall also belong and be given in property to the first petitioner.

SECTION III.

About the mode of acquiring mining concessions.

Art. 16. The Department of Fomento shall name in the States, Territories and in the Federal District special agents in its service, before whom the applications for mining concessions shall be presented. These agents are authorized to collect fees according to the tariff to be fixed by the Department mentioned.

Art. 17. The agents of the Department of Fomento shall receive the applications for mining concessions and shall note down immediately on the Register the day and hour of presentation. They shall thereupon proceed with the publication of the application and the measurement of the setts (pertenencias) by the expert or the practical man whom they shall appoint, and in case there be no opposition, they shall send a copy of the proceedings and of the map to the Department of Fomento for the corresponding approbation and the issue of the titles.

The Regulations shall fix the time within which these acts have to take place and shall detail the mode of procedure by the agents.

Art. 18. The approbation of the proceedings being obtained, and the title to the property having been given in favor of the concessionaire the latter enters into possession of the mining fields without further formality.

Art. 19. The agents of the Department can not suspend the proceedings for any reason whatever, unless there be opposition. When once the time has expired as fixed by the Regu-

lations, they shall be obliged immediately to send the protocol of the proceedings, in whatever condition it may be, to the Department of Fomento, so that after examination it may declare the tardy applicant rejected, should the fault be his, or hold the agent responsible, if through him the case has been delayed. The tardy applicant can not again petition for the same concession.

Art. 20. When opposition is made by the owner of the surface ground to the request for any mining concession or to the making of the respective measurements, and he claims that the ore deposit does not exist, then if there be found indications of a deposit on the surface, or any excavations or workings of exploration in the deposit itself, the Agent of the Department of Fomento shall reject the opposition. In case that no indications of any ore body exist on the surface of the ground and there be no excavations or workings on the same, then a proceeding analogous to Section II of this law shall be followed, the respective judge deciding whether or not the concession shall be granted. His decision can be appealed against in both cases. The decree shall be communicated to the Department of Fomento.

Art. 21. The agents of the Department of Fomento shall suspend proceedings in case there be opposition and shall send the protocol to the Judge of 1st Instance of the respective place for trial and judgement. The judicial authorities shall advise the Department of Fomento of their decision.

SECTION IV.

General dispositions.

Art. 22. The working of mineral substances, whether they are of those that are acquired through a concession according to this law, or of those that belong to the owner of the surface, shall be subject to all the dispositions which the provisions of this law may dictate in regard to police regulations and the security of the workings themselves, but if the owners

conform to the Regulations, they will on the other hand have complete liberty of industrial action, to work in the way that suits them best, to hurry, delay or suspend for more or less time their work, to employ the number of workmen they wish and wherever it suits them best, and finally to follow whatever system they prefer as regards workings, extraction, drainage or ventilation, as they consider most suitable to their own interests. The owners however, remain responsible for the accidents which may happen in the mines on account of their being worked badly and for damages occasioned to other properties by reason of not taking out water, or any other circumstance which may prejudice the interest of others.

Art. 23. When in order to push the work in the mines of a locality, the necessity arises for making drainage tunnels, the execution of these works shall be a matter of contract between the interested parties.

Art. 24, The partnerships or companies formed for working mines shall be governed by the dispositions of the Comercial Code, except as regards associations which are not admissible in mining matters.

Art. 25. The contracts for furnishing money to the miner, named until to-day "avio," shall in future have the character, either of partnership, in which case the provisions of the foregoing article shall be observed, or of mortgage. The mortgage, in mining matters, can be freely given in accordance with the Regulations of the Civil Code of the Federal District, but the indivisability of the mining setts (pertenencias), established in article 14 of this law, shall be taken into account and the regulations of the Commercial Code as regards the Register shall be observed, and for this purpose a special book of mining operations shall be opened. The holder of the mortgage shall always have the right to pay the tax mentioned in article 5 of this law and shall through this payment acquire a right of preference over the owner of the mine in regard to his own mortgage.

Art. 26. The mortgage may be divided into mortgage bonds to name or to bearer, either in the titles which constitute the debt or by a later document. In every case it shall contain the dispositions organising the corporate representation of the holders of the bonds. These dispositions, and also those relating to the amount of the debt, to the conditions of the same and to the guarantee, shall appear in print on each of the mortgage bonds.

The holders of the mortgage bonds can only take action agains the debtor or the mortgage property through their common representative, whose acts as regards their rights shall be obligatory on all the holders.

Art. 27. The trials by court in mining matters, shall take place and be decided, in the Federal District and Territories and in each State, before the judges and tribunals which are competent according to the Regulations of the Commercial Code, care being taken to comply with the provisions of Chapter 9th., Tittle 1st., Book 4th. of said Mercantile Code, stipulating that the first expense of the administration indicated in the second clause of art. 1030 of the same Code, is the payment of the tax.

Art. 28 The new tax which shall be paid by all mining concessions, with the exception of those which are expresly exempt by contract, shall be a Federal tax on the property and shall be established by the respective special law.

As regards the other taxes on mining, the dispositions of the law of June 6, 1887 shall be observed.

Art. 29. Default of payment of the property tax, levied in accordance with the regulations and procedure of the law which establishes the same, shall constitute, from the date that this present law gets into force, the only reason for forfeiture of mining property, which in this case remains free of all burden and shall be conceeded to the first applicant in accordance with the provisions of this law and its regulations.

Art. 30. The industrial branch of mining shall belong to the

Department of Fomento, which therefore can dictate, in accordance with the regulations of this law, all the measures it judges necessary for the promotion of the prosperity of the mining industry and which shall watch that the said law be enforced. It shall name the inspecting mining engineers it may think necessary, to visit the workings of mines or mineral substances, to study the same, to make investigations and to fulfill in general whatever commissions the Department may give them, in accordance with the details prescribed by the Regulations.

Art. 31. The Executive Government shall fix, according to the terms of article 21 of the Federal Constitution, the penalties which those incur who infringe the dispositions of the Regulations which it issues for the fulfillment of this law.

The official transgresions for which the agents of the Department of Fomento are responsible, shall be brought before the judges of the corresponding district according to the respective laws.

The ordinary transgressions committed in the mines remain subject to the corresponding territorial judges; this however, shall not interfere with the administrative punishment, should the Federal Authorities impose any.

Art. 32. The establishment and working of mills and all kinds of metalurgical works shall be guided by the Regulations of the common law and, as regards taxes, by those of the law of June 1887.

Art, 33. There remains exempt from taxes that part of the tunnels situated outside of properties, when these are destined exclusively for the ventilating, draining and extracting of minerals that do not proceed from the said tunnels.

SECTION V.

Transitory provisions.

Art. 1. The denouncements of mines or surplus ground (demasías), which are in procedure when this law goes into force,

shall be continued and substantiated and shall be decided according to the provisions of the same.

Art. 2. The surplus ground or open spaces existing between neighbouring mining properties and which have not been denounced when this law takes effect, shall correspond and shall be given to the first party who applies for the same.

Art. 3. The contracts for the exploration and working of mining zones made with the Department of Fomento which are in force when this law takes effect, and in virtue of which the concessionaires are complying with the respective stipulations, shall remain in force for the whole time of their duration if the concessionaires so desire. The concessionaire can however, within a year's time counted from the date this law goes into force, choose the provisions of the new law and as soon as he makes declaration to this effect before the Department, he shall be relieved by the same from the obligations which said contracts imposed on him and shall receive again the corresponding deposit. Remaining subject to this law and its Regulations only, he shall acquire and conserve perpetualy his mining concessions as long as payment is made of the Federal Property Tax.

Art. 4. Existing mining properties which are being worked or are held by special permit (amparo) when this law goes into force, notwithstanding that they are not in accordance with the same, shall remain in subsistence, and the mines shall retain their setts with whatever measurement they may have, though these be different from those herein established.

As regards the tax however, the unit mentioned in article 16 of this law shall serve as a basis.

The owners however, can ask for a rectification of the concession and for a new property title.

Art. 5. The contracts for furnishing money to the miner [illegible] and all those relating to mining business, which are in existence when this law takes effect, shall be governed by their respective stipulations, and as regards points which may

have been omitted, by the mining law which was in force at the time these contracts were made; but it shall be indispensable to the validity of the future operations which have their origin in these contracts, that these be registered according to the provisions of articles 24 and 25 of this law, within a year's time counted from the date it takes effect.

Therefore, whenever a mining business is transferred, under whatever pretext to a third owner, the latter shall be responsible for the obligations resulting from said contracts supposing that any suit in court should arise from the same.

Art. 6. The work which is being done in the mining sett (pertenencias) of another owner in accordance with the law still in force, cannot be prosecuted after the date on which this present law takes effect, unless it have the consent of the owner of this sett.

FINAL PROVISIONS.

Only Article. This law will go into force in the whole República on July 1st 1892, and from that date the Mining Code of Nov. 22nd. 1884 and the circular orders and provisions relating to the same shall be abolished.

Art. 10 of the law of June 6 of 1887 shall also be abolished from the date of the promulgation of this law.—*Alfredo Chavero*, President of the House of Representatives.—*V. de Castañeda y Nájera*, President of the Senate.—*J. M. Gamboa*, Secretary of the House of Representatives.—*Mariano Bárcena*, Secretary of the Senate.

"Therefor, I order that the same be printed, published, cir-
" culated and given full compliance.

"Given in the palace of the Executive Government of the
" Union, in México, on the 4th day of June 1892.—*Porfirio Diaz.*
" —To citizen Manuel Fernández Leal, Secretary of State in
" the Department of Fomento, Colonization and Industry."

And I communicate the same to you for your knowledge and other purposes.

Liberty and Constitucion. México, June 4th, 1892—*M. Fernández Leal.*—To.....

DEPARTMENT OF THE TREASURY.

SECTION Nº 8.—DIVISION Nº 2.

The President of the Republic has been pleased to send me the following decree:

"*PORFIRIO DIAZ, Constitutional President of the United States of Mexico to their inhabitants, know ye:*

That the Congress of the Union has thought fit to decree as follows:

"The Congress of the United States of Mexico decrees:

Art. 1. In accordance with the provisions of the articles relating to the new mining law, there shall be established a Federal property tax, which shall consist of two parts: one part, which has to be paid once only, in stamps to be fixed to all titles of mining property, and the other part which has to be paid yearly for each one of the mining setts of which a grant is composed.

As regards the tax, the mining sett ("pertenencia") or unit of concession shall be the one established by art. 14 of the new mining law . Consequently all old and new mining fields existing in the Republic, whatever be their extent, shall be valued according to this unit.

For the fractions of mining setts that amount to one half or more, the tax shall be paid as if they were whole setts and nothing shall be paid for the fraction that is less than one half.

Art. 2. Within the peremptory term, counted from the promulgation of this law until the 31st October of the present year, every owner or actual proprietor of mines, whatever title he may have, shall be obliged to present his documents to the office of the Treasury which the Regulations of this law may determine, so that the new stamps of ownership of the mines

may be fixed to the title and account may be taken, for the payment of the annual contribution, of the number of mining setts (pertenencias) which form the property, a corresponding Register being opened for this purpose.

The titles which in future the Department of Fomento will issue in accordance with the new mining law, have to carry the stamps corresponding to the same. These stamps shall be furnished by the party receiving the grant and shall be in proportion to the mining setts ("pertenencias") which the grant contains.

Art. 3. The property stamps of the mines shall be of the value of ten dollars, and have to be affixed to the titles of the property, one for each mining sett of ten thousand square metres. The rule established in article 1 to be followed as regards the fractions.

These stamps have to be cancelled by the office of the Treasury authorized to receive the titles which were extended up to the 30th of June of the present year; the Department of Fomento cancelling those belonging to the titles which are issued in accordance with the new mining law.

Art. 4. From the 1st of July of the present year, all owners or proprietors of mines shall be obliged to pay the sum of ten dollars annually for each one of the setts (pertenencias) of which their grants are composed.

The amount of the tax shall be the same whatever is the nature of the substance which is being worked, on the understanding that the mine has been acquired through denouncement or by special grant before the date on which the new mining law takes effect, and that in future it shall be acquired by grant and title in accordance with the new law.

Only those mines shall be exempt from the payment of the annual contribution on mining setts and of the stamps on the titles of the property, which have been expressly freed from the same by contracts, made with the Executive Government in virtue of the authority given by the Legislature and appro-

ved by the same. This exemption shall only last for the time stipulated in the contract, and shall in no case be renewed.

Art. 5. The yearly property tax on mines shall be paid in three advance payments during each fiscal year, each payment to be made during the first month of each one third part of the year, in the office of the Treasury which the Regulations of this law shall determine, and to which the tax payers shall proceed in order to make their payments, without further need of notification or any other requisite on which they might found delay or excuse.

Art. 6. Failure of presentation of the title which secures the possession of the mine within the time fixed in article 2, shall be punished by a fine equal to the amount of the stamps which the title has to carry, if the same be presented within the two months following the expiration of the time allowed. For every two months more that the presentation is delayed, the holder shall incur a fine equal to the amount of the stamps.

The concealment of the number of mining setts shall be punished with a fine equal to double the amount of the stamps which the title ought to have had for the conceded mining setts (pertenencias), to which shall be added double the amount of the yearly tax for the whole of the time that the same has not been paid. This shall not interfere with the civil or criminal responsability to which the concealer is liable and to which he shall be subjected in due time.

Failure to pay the annual property tax within the first month of each one third part of the year, shall cause the owner to incur a fine amounting to fifty per cent of the amount of the tax in case he pay during the second month.

If the payment be made in the third month, the fine shall be equal to the amount of the tax. When once this last named term has expired without the tax and the acumulated fines being paid, the mining property shall be lost to the owner without further appeal. The Department of the Treasury shall make the corresponding declaration and shall publish the same

in the official paper so that any other party may petition for the property.

Art. 7. When the owner of the mine sells the same, he shall give the respective notice for anotation in the Register and the bill of sale which is given shall carry the stamps which according to the stamp tax it should have.

Art. 8. In case it no longer suits any person or company to continue working the mine or mines which he or it may possess, the corresponding office of the Treasury shall be advised in writing, so that the tax may be settled up to the date of the notification and the corresponding entries be made in the Re-Register.

Alfredo Chavero, President of the House of Representatives. —*V. de Castañeda y Nájera*, President of the Senate.—*Juan Bribiesca*, Secretary of the House of Representatives.—*Mariano Bárcena*, Secretary of the Senate.

"Therefore, I order that the same be printed, published, circulated and given full compliance.

"Given in the palace of the Executive Government of the Union, in México, on the sixth day of June 1892.—*Porfirio Diaz.* —To the Secretary of State in the Department of the Treasury and Public Credit, Cititizen Matías Romero.—Present."

And I communicate the same to you for your knowledge and other purposes.

Liberty and Constitution. México, June 6, 1892.—*Romero.* —To.....

MINING REGULATIONS.

Department of Fomento, Colonization and Industry of the Mexican Republic.—Section 3d.

The President of the Republic has been pleased to adress to me the following decree:

"*PORFIRIO DIAZ, Constitutional President of the United States of Mexico, to the inhabitants thereof, know ye:*

That by virtue of the constitutional powers vested in the Executive and in conformity with article 1st of the law of June 4th of the present year, I have seen fit to decree the follo wing:

Regulations for Administrative proceedings regarding mining.

CHAPTER I.

Of agents.

Art. 1. The especial agents, dependent on the Department of Fomento, and appointed by said Department wherever judged necesary according to article 16th of the Law, for any Mining Districts, shall receive and transmit all petitions for mining concessions and extensions presented to them and shall exercise all the other functions marked out by the law and its regulations.

In the event of any doubt as to the proper application of the law the Agents shall consult the Department of Fomento.

Art. 2. At the time of making the appointment the jurisdiction of each Agent shall be clearly defined, and the same, as well as any ulterior amendement thereof published in the *Diario Oficial*, the Government official organ.

Art. 3. The fotlowing requirements must be complied with in order to fill the position of Agent of the Department, viz: The applicant must be a Mexican citizen in the possession of

his legal rights and he must fill no other Government position in the State, Territory or Federal District.

Art. 4. With each Agent appointed at the several Mining Districts, a number of substitutes shall be designated in proportion to the magnitude of business developed in that District.

These substitutes must possess the same qualifications as the Agents themselves, and will represent the latter during any temporary or permanent absence as well as on all occasions where legal impediment may occur, the substitute being previously called upon by the respective Agent.

Art. 5. Legal impediments to the action of Agents, will be the same as those which apply to the judges, as set forth in Sections I to IX and XII of article 1132 of the Commercial Code.

Art. 6. In case of death or serious illness preventing the Agent from notifying his substitute, the latter shall enter into the former's functions without loss of time, giving the Department due notice thereof through the mail, or by telegraph where such exists.

Art. 7. The Mining Agents shall give the public due notice as to their place of business and hours devoted thereto, which business shall not be interrupted except on Sundays and National holidays.

Art. 8. The Agents shall receive no other fees for their services than those set forth by the respective tariff and in any case not specified therein, they shall consult with the Department as to the amount to be charged.

Art. 9. During the first ten days of each month the Agent must forward to the Department of Fomento a detailed Report of all petitions for Mining Concesions presented to him during the previous month.

CHAPTER II.

Of explorations.

Art. 10. Each and every inhabitant of the Republic shall have the right to carry on mineral explorations on any Natio-

nal lands, due notice thereof being given to the Agent of the respective zone, as prescribed by Law. The notification must be tendered in duplicate, specifying therein the limits of the Zone to be explored.

The Agent shall return to the exploring party a copy of said notification, specifying thereon the date and hour it was presented and warning the same that in the event of any excavation being effected, this should be done strictly in conformity with article 13 of the Law and 14 of these Regulations.

Art. 11. If the explorations are to be made on private property the exploring party should first obtain due permission from the owner of the property, or his attorney, who if authorizing it, will give the explorer a written statement specifying thereon the limits of the ground to be explored. This statement must be presented to the respective Agent, who, after making the proper entry in the Record, shall return it to the exploring party, expressing the date and hour when presented.

Art. 12. If the owner of the property, or his representative should fail to grant the permission called for, the exploring party should apply to the Agent for the same stating at the same time his security therefor. This petition shall be presented by the Agent to the owner of the property, who, failing to protest within a fortnight, shall be understood to grant his consent. At the expiration of the aforesaid fifteen days, the Agent shall adopt the proper proceedings, fixing at the same time the amount of security which must be provided by the exploring party and granting a term of 30 days for presenting the same. The security once provided the Agent shall give to the explorer a written acknowledgement, expressing thereon the limits of the section to be explored.

Art. 13. During a term of three months, not to be prorogued, from the date of the notification, permission or Administrative proceedings referred to in articles 10, 11 and 12 of these Regulations, the Agent shall admit of no other petition on the

site applied for explorations, than those proceeding from the exploring party.

Art. 14. The exploring party or parties shall not carry on the work of exploration at any distance from towns or inhabited places, nearer that fifty metres from the exterior boundaries of public and private buildings and outhouses belonging thereto. The same distance shall be observed with regard to any public edifice or construction of any kind, but this shall be reduced to 30 metres from the lines bordering on highways, Railroads and Canals. With regard to fortified places, no work of exploration shall be carried on within one kilometer reckoned from the outer lines of same.

CHAPTER III.

On concessions.

Art. 15. The petitions for concession of claims or extensions must be presented in duplicate to the respective agent. These petitions shall clearly express the number of claims wanted, their situation on the ground and the relative position of said ground with regard to the corresponding Municipality, fixing the most notable points of the locality for indentification, and specifying at the same time the mineral substance to be developed. Should the Agent judge the petition as lacking clearness and accuracy on any point, he shall have the right to question the petitioner in order to obtain the same. All such information shall be affixed to the duplicate petition and the Record of the Agency, in the presence of said petitioner. Ignorance or inability on the part of the petitioner to afford the desired information shall be no obstacle in the way of registering the petition, or sufficient cause for suspending the proceedings.

Art. 16. The Agent shall admit no other petition for the same site until the Department of Fomento has given its final decision with respect to the first petition.

Art. 17. On presentation of a petition to the Agent, this functionary shall proceed to register the same in the presence of the petitioner, stating on the margin of both petition and duplicate thereof, as well as in the Official Register duly authorized by the Department, the date, hour and numerical order of presentation. The duplicate shall then be returned to the petitioner. The petitions must be registered strictly in the order of dates and hour of day presented, leaving no space in blank between the inscriptions.

Art. 18. In the event of two or more petitions for claims or extensions on the same site, being presented at the same time the decision shall be cast by lots.

Art. 19. Within three days following the presentation of a petition for concession of mining claims, the Agent shall appoint an expert, or, if such is not to be found, a practical surveyor, to take the measurements and draw the plans of the claims and extensions solicited, expressing clearly thereon the monuments marking said claims as well as those of all other claims within an area 100 metres all around. The Agent may appoint the surveyor suggested by the petitioner provided said surveyor meet all the requirements prescribed by law.

Art. 20. Within the next eight days following the appointment referred to in the foregoing article, the surveyor must communicate with the respective agent stating whether he accepts the appointment or otherwise. If in the first case, he should also state that arrangements had been concluded between himself and the petitioner, as to the amount of fees to be collected. The agent shall, thereupon, make the proper entry on the respective papers.

At the request of the petitioner, the agent may extend, on one single occasion, the aforesaid period of eight days, to another eight.

Art. 21. On making the entry referred to in the foregoing article, the agent shall fix a period not exceeding sixty days for the presentation of the drawings referred to in article 19

accompanied by an explanatory report by the surveyor; the agent shall then proceed to draw up an extract in duplicate containing the following data:

I. The petition, specifying in a clear and precise manner the name and dwelling of the petitioner, and the numerical order of the corresponding title.

II. The name residence and acceptance of the surveyor appointed.

III. Due notice that, within a period not to exceed four months from the date of said extract, the corresponding title shall be finally substantiated at the respective agency.

A copy of the Note shall be published in the bulletins fixed on the exterior of each agency, the petitioner furnishing the revenue stamps necesary for said publication. The notice shall remain on the bulletin boards for a period of one month, due entry thereof being made in the corresponding title.

Another copy of the notice shall be handed the petitioner, who, at his own expense and risk, and within forty days after the date of said notice, shall have the same published three consecutive days in the official paper of the respective State, Territory or Federal District, copies of which issues must be delivered at the agency by the petitioner, in order to have the same attached to the corresponding title.

Art. 22. The publication of the notice, as stated in the previous article, shall serve as summons to all such as may deem themselves justified in protesting against the concession of the petition in question.

Art. 23. On making the entry referred to in article 20, the Agent shall hand the surveyor a certified copy of his appointment, which must close with a warning that whosoever may resist or oppose the execution of any work undertaken by the surveyor shall make himself liable to the penalties established in article 904 of the Penal Code of the Federal District, or the law of the respective State.

Art. 24. Should the surveyors meet any opposition or posi-

tive resistance in the execution of the previous article, they may call the local authorities to their assistance.

Art. 25. The surveyors shall pay due attention to all remarks offered by the petitioner as well as by those who have opposed or may oppose the petition; but they shall reserve their views on the subject for the written report referred to in article 21, the presentation of which, within the period therein stipulated, shall be for the sole account and responsibility of said surveyor, as well as all damages that may arise from the non-delivery of said Reports and Maps.

Art. 26. Opposition to the concession of a petition for any of the following reasons, shall only be admitted during the four months stipulated in clause III of article 21, viz:

I. By the dissent of the property owner.

II. By the invasion or trespass on adjacent claims or extensions.

III. By prior rights or petition to the claims or extensions solicited.

Art. 27. On receipt of a protest to any petition, the Agent shall notify the petitioner by means of a written notice placed on the bulletin boards during three consecutive days, expressing thereon the names of the claimant and opponent respectively, as well as the numerical order of the corresponding title, wherein due entry shall be made of said publication.

Art. 28. Save in the event of the petitioner notifying the Agent that he desists from his claim, the latter shall have the opponent's protest preserved on file until the Surveyor's Report and plans are presented.

Art. 29. On presentation of these documents the Agent shall proceed to call a meeting of the parties, to take place within the next fifteen days, publishing said summons on the Agency bulletins during three consecutive days, and expressing the number of the case, names of the parties, and date and time of day appointed for the meeting. At this meeting it shall be the Agent's mission to bring about a compromise between the

dissenting parties, in order to avoid legal complications. Of all these particulars due entry shall be made in the respective provision.

Art. 30. If the opposition should spring from the land owner, and the Surveyor's Report should point to indications of mineral deposits on the surface, or any explorations in said deposits, the Agent shall carry the Administrative proceedings in the matter to a conclusion, so that the Department may issue the proper title in favor of the petitioner, since this, according to articles 7 and 11 of the Law is either simply accountable for the under ground operated upon, or otherwise leaves to the jurisdiction of the courts the extension and appraisements of the surface occupied by the miner. At the conclusion of these proceedings, which shall be duly placed on record, the Agent shall notify the parties that they are at liberty to have recourse to the usual tribunals, according to article 20 of the law.

Art. 31. In any other cases of opposition enumerated in article 26, should the agent be unsuccessful in bringing the parties to a compromise, he shall at once suspend all further proceedings and deliver the respective papers to the petitioner, who, on his own responsibility and within a reasonable term appointed by the Agency, must present them before the corresponding local Judge of First Instance.

Art. 32. If any reasonable opposition based on causes not provided for in article 26 should be produced, the Agent shall simply affix the same to the corresponding papers, without suspending the proceedings on this account.

Art. 33. In the event of any opposition being made after the delivery of the Surveyor's maps and Report, but before the expiration of the four months stipulated in clause III of article 21, the proceedings referred to in articles 29 to 32 shall be continued without interruption. This being the only instance, (aside from the remision to the Tribunals) where the agent may delay the subtantiation of the papers for 35 days after the

said four months, provided the opposition be made within 20 days of the expiration of the above mentioned four months.

Art. 34. If the four months referred to in article 26 should have transpired without any opposition being made, or in the event referred to in arts. 30 and 32: or should the papers be returned by the Tribunals with a judgement in favor of the petitioner, the Agent is strictly enjoined to forward to the Department of Fomento, within the next fifteen days following, and under registered cover, copies of the papers and maps; unless the petitioner should undertake to be the bearer of those documents, in which case the Agency shall give due notice thereof to the Department.

Art. 35. The petitioner shall furnish the Agency with the amount of Revenue stamps required for issuing the title. These stamps shall accompany the copies of papers and maps forwarded to the Department under registered cover, and will be returned, through the Agent, to the petitioner, if the Department should disaprove the decision and consequently refuse the title. If the petitioner should so desire it, he may appoint the party who must deliver the stamps to the Department.

Art. 36. Any omission or neglect in presenting the petitions, furnishing the stamps, or printed notices, payment of fees, or non appearance at the meetings, and in general of any requirement mentioned in this chapter, imputable to the claimaint or the opponent respectively, shall imply, on the part of the former, the relinquishing of all claims and his petition, and on the latter that he desists from his opposition, and consequently, acknowledges the legality of the petitioner's claims.

Art. 36. After due consideration and approval of the decision by the Department, the proper title shall be issued and forwarded to the Agent, who must deliver the same to the petitioner with a copy of the maps duly stamped by the Department of Fomento; this Department furnishing that of the Treasury with a detailed report on the concession granted.

Should the decision meet the disapproval of the Department,

the Agent shall be notified thereof in order that any errors or deficiencies may be rectified, within the term appointed by the Department, provided said error or deficiencies are not chargeable to the petitioner or the Agent himself, in which case a different course shall be adopted, in accordance with article 19 of the Law.

CHAPTER IV.

General Laws.

Art. 38. The work to be preformed on the ground by the expert, according to article 19, must conform with the scientific methods in order to obtain the horizontal longitudes on the sides of the claims and the angles made by same with the true meridian. To this end the surveyor must determine the magnetic deviation of the compass, if this instrument is used to lay off the sides. The surveyor shall mark some of the points in the boundary by means of permanent monuments on the ground, gathering all the necessary information besides, in order to verify said measurements when desired.

The surveyor shall designate upon the ground the spots where the monuments ought to be constructed, as set forth in article 41.

Art. 39. The maps of the respective claims must be neatly and accurately drawn on strong paper for the better preservation of said documents. The copies thereof may be produced on tracing cloth. The maps must be made in proportion to their objects on a decimal scale giving the lengths of the sides in metres, the direction of same with regard to the true meridian, and the deviation of the compass at the time of taking the observations, and lastly the area of the surface in hectares.

Art. 40. The selection and survey of the claims upon the ground confers no rights to the occupation of same, but shall serve simply to show the limits embraced in the mining concession thus obtained. For the final acquisition of the surface required by the petitioner for the development of his mining

concession, or that covering the total area of his claims, he must either arrange with the owner of the property by means of purchase or otherwise present an action before the corresponding Tribunal for the expropriation of said ground as prescribed by article 11 of the Law.

Art. 41. The monuments to be fixed on the ground must meet the following requirements:

I. Their position must be permanent as they are intended to mark spots not to be changed as long as the concession for the claims undergoes no modification. Their construction must be solid and they shall be kept in good repair.

II. A sufficient number of them shall be erected in the most convenient places so that from any one monument, the preceding as well as the following one may easily be seen. Care should be taken to distinguish the same in shape, color, or any other charasteristic mark from those of adjacent claims.

Art. 42. The concessionaires of mining claims shall not overstep the limits marked in their respective concessions, (as prescribed by article 8 of the Law) except in the event of waste lands existing near their property, due petition for the extension thereof being previously presented to the respective Agent, who shall proceed in this case exactly, in the same manner as prescribed in these Regulations for the concession of mining claims. The like process shall be adopted in the substantiation of petitions for the rectification of claims.

Art. 43. The possession of a legal concession is indispensable for the operation or development of all mineral substances enumerated in article 3 of the Law. Therefore no manner of work tending to the development of mines or deposits of said substances, whether on the surface or under ground, shall be allowed without the same being protected by means of a legal title thereto, duly registered.

Art. 44. All petitions of concession for the development of any substance not enumerated in article 3 of the Law, shall be rejected, the development of said substance acccording to

article 4 of the same Law being the exclusive right of the land owner.

Art. 45. In compliance with clause IV of article 12 of the Law, a petition for the corresponding license accompanied by a horizontal projection and profile of the Adit, reduced to a proportional decimal scale and all other particulars that may be deemed pertinent thereto, shall be presented to the respective Agent. Said Agent shall forward to the Department the corresponding petition and maps, together with his report on the subject.

The Department, on receipt of these documents and all further information that may be deemed necessary, shall proceed to render its decision.

Art. 46. The owner of mining claims who should be refused the consent of the party that ought to render the legal service, shall present to the Department (in compliance with clause XIX of article 12 of the Law) the corresponding protest in the form of a petition embracing all the necessary information on the subject.

The Department, in conformity with the Agent's report thereon, and after a hearing granted the dissenting party, or his attorney, shall render its decision within the period previously established for that purpose.

Art. 47. If the petitioner or the party who ought to render the service referred to in clause XIX of article 12 of the Law, should deem the Department's judgment unfavorable to his legal rights and interests, he shall be at liberty to appeal from this decision to that of the respective Judge, provided said appeal be made within two months from the date of the Administrative decision.

Art. 48. In places within the Republic, not embraced in the jurisdiction of a mining Agent, the petition for concessions as well as the notices and concessions themselves shall be presented to the Postmaster of the locality, who shall file said documents, expressing thereon the date and time of day pre-

sented, and shall notify the Department of Fomento through the mail, and by wire where such means are obtainable.

Art. 49. The Postmaster shall receive and file the petitions for concessions or the concessions themselves only in such cases where his residence lies beyond the jurisdiction of any mining Agent.

Art. 50. The department of Fomento shall publish in the *Diario Oficial*, the Federal Oficial paper, every six months, the number of titles issued during that period.

Art. 51. The special book referred to in article 25 of the Law, shall be kept by such parties as are designated in art. 18 of the Comercial Code, in the manner prescribed for in said Code, chapter I, title II, book I.

Art. 52. It is the right of every individual to inscribe his titles for future concession or actual property in the Commercial Registers, as sanctioned by art. 36 of the Commercial Code in such cases where the proper Register is not kept.

Art. 53. It is compulsory for all mining corporations as well as for the creditors thereof, to register all their transactions, as stipulated in articles 25 of the Law and 5 of the by-laws.

Art. 54. Al mining corporations are obliged to register the location of their mining claims as well as the residence or residences of the Company at the County seat or District court.

Art. 55. If through the extension of claims or other causes any doubts should arise regarding the place where the registering should be effected, in accordance with the previous article, the Department of Fomento shall render its decision thereon, communicating the same to that of the Treasury.

CHAPTER V.

Transitory provisions.

Art. 1. The agents shall receive in the strictest numerical order, as per inventory thereof, all the papers found in the present Mining Deputations or other such offices on taking possesion thereof and all provisions pending resolution shall

be given due course, as prescribed in article I, chapter V of the Law.

Art. 2. All claims in the course of publication shall be placed on the bulletin boards after the Agent has duly complied with the prescription expressed in article 21; said notice being again published in the official paper referred to in the last mencioned article.

Art. 3. When the cases of denouncement have been duly advertised, though the appointment of the expert should be still pending, the Agent shall proceed exactly as in the case of a new petition without making a entry in the Register.

Art. 4. With regard to cases where the surveyor has been appointed but has not, as yet, presented the Maps and Report, the Agent shall proceed in like manner as in the case of new petitions without making a new entry in the Register.

Art. 5. With regard to cases where the maps and Report have been duly presented, the Agent shall proceed to draw a note in duplicate containing the following:

I. Copy of the petition, clearly expressing thereon name and residence of the petitioner and numerical order of corresponding document.

II. The surveyor's Report.

III. Notice that a term not to exceed two months from the date of said note, will be allowed for the substantiation of the corresponding papers at the Agency.

Art. 6. In the event of cases of denouncement where any opposition should have occurred before delivery of the maps and Report, the Agent shall proceed in accordance with article 27 and, if required, as prescribed in articles 28 to 32.

Art. 7. With regard to cases where any opposition may have arisen, the surveyor's maps and Report being delivered, or where the opposition takes place within the two months stipulated in article 5 of these by-laws, the proceedings shall be analogous to those in articles 28 to 32, the agencies having the right to the 35 day extension granted in article 33.

Art. 8. The same proceedings (as in articles 27 to 32) shall be adopted with regard to cases undergoing the 20 days probation, expressed in article 78 of the Mining Code, of Nov. 22d. 1884. The agents in their administrative capacity cannot render their decission in the same manner and spirit as the corresponding Tribunal.

Art. 9. At the expiration of the two months referred to in article 5 of these by-laws, or in any event provided for in article 34, the Agents shall proceed in conformity with the prescriptions of said article.

Art. 10. For this one occasion the three days stipulated in article 19 shall begin to count from the date on which the Agent shall announce that the office and business pertaining thereto are open to the public.

Therefore let this be printed, published and circulated for the fulfillment thereof.

Given at the Palace of the Executive Power of the Union. México, June 25th. 1892.—*Porfirio Diaz.*—To Mr. Manuel Fernández Leal, Secretary of State and of the Department of Fomento, Colonization and Industry.

And I communicate the same to you for your knowledge and subsequent results.

Liberty and Constitution. México, June 25th. 1892.—*M. Fernández Leal.*

TARIF

For the payment of fees to the Mining Agents.

I. For the inscriptions in the notice or in the concession of explorations referred to in Articles 10 and 11 of the "Regulations or Legal Proceedings regarding Mining" and the corresponding entry in the Records, one dollar.

II. For the proceedings on each concession of exploration referred to in articles 12 of said Regulations, and entry thereof —two dollars.

III. For registering each petition of mining concession, or extension thereof, or rectification of same, and entry in the Records, one dollar.

IV. For the publications, memorials and notes on papers at the rate of twenty cents, for each ten lines or fraction thereof, besides ten cents, for the title page covering the documents to be copied.

V. For the transcription, checking and legalization of testimonies, certificates and other copies, at the rate of one dollar for each 100 lines or fraction thereof. For the search for a paper or any other document from the Archives, one dollar. When the petitioner cannot furnish sufficient data on the subject, and documents of over a year's date must be searched, one dollar for every year thus revised.

VII. For every kilometre traversed in any direction, for the prosecution of any transaction in connection with his office, twenty five cents.

VIII. For examinations of any kind, whether on the interior or exterior, five dollars.

IX. For inspections, visits or examinations of under ground works, five dollars for every 100 metres in depth, or fraction thereof, and five dollars for the corresponding report.

X. For his appearance at meetings not exceeding an hour in duration, three dollars, and one dollar more for every hour extra, or fraction thereof.

Liberty and Contitution. México, June 25th. 1892.—*Fernández Leal.*

Department of State and of the Treasury and Publie Credit. —México.—Section 8.—Table 2.—Circular Nº 19.

With the object of obviating any difficulties that might arise in different localities of the National Territory in complying with the provisions of articles 3 and 5 of the Regulations of

June 30th. last of the Mining Tax Law (Ley de Impuesto á la Minería), owing to the distance at which mining properties may be situated from their respective Sub Treasuries (Jefaturas de Hacienda) and to the difficult means of communication, the President of the United Mexican States has seen fit to determine that in such instances the nearest Fomento Agent,—subject to the fees which for the performance of this duty will be designated by the proper Department and which will be payable by the parties interested,—is autorized to receive the manifestations prescribed in the above mentioned article 3 and a copy of the original and last transfer title papers, which he will duly compare and legalize, the latter, together with the Manifestation, constituting the Proceedings in the matter, which shall be forwarded, accompanied by the Report which he must render bearing on the accuracy and limits of the dependencies to the proper Sub-Treasurer, in order that the latter, after making the necessary entries, may, without further procedure, carry out the provisions of article 4 of the Regulations. The "Fomento" agents will be careful to affix and cancel the stamps, which the Law prescribes on the original titles, retaining the latter in their possession until final determination is made, when they shall be returned to their owners with the respective number and date of entry in the Register of Federal Mining Taxes (Registro del Impuesto Federal á la Minería) noted thereon, and which will be duly transmited by the proper Sub-Treasurer.

I communicate the same to you for its effects.

México, August 15th., 1892—*Romero.*

DEPARTMENT OF STATE AND OF THE TREASURY
AND PUBLIC CREDIT.

MEXICO.

Section Nº 8.

The President of the Republic has seen fit to approve the following

REGULATIONS OF THE MINING TAX LAW

OF JUNE 6th. 1892.

Tax upon mining properties.

Art. 1. The tax established by this law is applicable to the mining properties now existing or which may hereafter be authorized by the Department of Fomento in conformity with article 3 of the law of the 4th. of the current month. The mining properties defined in Sections III and IV of article 1 of the Mining Code of November 22 1884 are, in so far as refers to taxes, not subject to the present law, being liable only to that dated June 6th. 1887 and such others as may be now in force.

Art. 2. The tax upon Titles shall be paid by affixing to the last Deed of Transfer (Traslativo) that may be presented by the interested party, the corresponding amount of document stamps in conformity with article 3 of the law, the same to be canceled as therein prescribed.

Art. 3. All owners and present holders of mines comprised in those referred to in article 1 are obliged to present to the proper Sub Treasury in the States or to the "Administraciones de Rentas" in the Territories, within a term which shall

not be extended, expiring on October 31 of the present year, and under penalty of the fines which may be applicable:

I. The original Titles of possession, pursuant to articles 4, Section 6 of the Ordinances of May 22nd., 1783 and 9 of the Mining Code of November 22nd., 1884.

II. The last Deed transferring ownership, in the event of the present owner or possessor being the assignee of the original denouncer.

III. A Declaration in duplicate, under protest of alleging the truth, which shall express in detail the name and place of residence of the owner or holder, and in such cases that of the Company and its Manager or Representative; the location and extension of the dependencies and surplus grants in conformity with the latest measurements, expressing whether these are contiguous or interrupted; the area of all dependencies and surplus grants taken possession of; the conversion of this area into Hectares, according to the terms of article 14 and Transitory article 4 of lhe law of June 4th. of the current year, and the reduction the petitioner may desire, if any, in conformity with article 4 Transitory of the Law cited and 8 of that of June 6th., 1892.

Art. 4. The presentation of the Titles referred to in the foregoing article has for its sole object the identification of the mine and the justification of the exactness of the conversion of the dependencies into hectares.

Art. 5. The offices mentioned in article 3 will return immediately to the interested party the duplicate of the declaration, after having noted thereon the date and hour at which the same was presented, affixing to the last Title the proper stamps.

Art. 6. Within three days subsequent to that on which the Sub Treasury or "Administracion de Rentas" may have affixed the stamps, the Documents or Proceedings (Expediente) shall be forwarded to the Treasury Department (Secretaría de Hacienda) together with a Report in which such office shall pre-

sent and substantiate its opinion as regards the exactness of the declaration made by the person interested.

Art. 7. Upon the receipt of the Documents or Proceedings (Expediente) by the Treasury Department (Secretaría de Hacienda) in the manner cited in the preceding article, the latter will determine, after having procured such information thereon as it may deem essential, whether the declaration shall be accepted or rejected.

Art. 8. As provided for in article 6, should the Department find the declaration to be exact, it will return the Titles to the proper Sub Treasury or "Administracion de Rentas" in order that either of the latter, as the case may be, may deliver the same to the interested person and certify upon the duplicate referred to in article 5 the factthat tax has been paid.

Art. 9. Should the Treasury Department not consider the declaration of the interested party exact, it shall determine the number of setts for which the proper stamps must be paid.

Art. 10. Within three days subsequent to the notification to the interested party, in the event provided for in the foregoing article, the latter shall manifest whether or not he agrees to the number of setts determined by the Treasury Department, it being understood that his acceptation thereof will be taken for granted should notice to the contrary not be received within the term indicated.

Art. 11. Should the party interested not be satisfied with the number of setts (pertenencias) determined by the Treasury Department (Secretaría de Hacienda), the latter shall designate an Expert, who, with the documentary proceedings (expediente) in his possession, will make an examination of the property and mineral possessions, presenting within the term of forty days a report thereon which shall be employed by the said Department as a basis upon which to render a definite determination in the matter.

Art. 12. Basing the same upon the report made by the Expert appointed, the Treasury Department (Secretaría de Ha-

cienda) will render a definite decision in the premises, returning the Proceedings to the proper Sub Treasury or Administracion de Rentas, where the stamps corresponding to the amount lacking will be duly affixed and a memorandum made of the duplicate declaration. In the event of cause existing therefor, the petitioner shall be bound over hy the proper Judicial authorities, in conformity with paragraph II, article 6 of the law of June 6th., 1092.

Art. 13. In any concession which may be hereafter authorized by the Department of Fomento after having duly affixed to the Titles the proper stamps, it will render to the Treasury Department (Secretaría de Hacienda) the information prescribed in Article 37 of the Regulations of June 25, 1892.

Art. 14. The concessionaires of Mineral Zones not desiring to avail themselves of the privileges conceded to them by the second part of transitory article 3 of the law of the 4th. of the current month, are required to appear before the Treasury Department (Secretaría de Hacienda) with a declaration in duplicate, conforming to the requirements of article 3 of the present Regulations, and in which they will also state the date of their respective concessions and whether or not they have incorporated within the limits of such Zones, mining setts distinct from those conceded by their contracts.

Art. 15. The Treasury Department (Secretaría de Hacienda), in view of the declaration filed with it in conformity with the prescriptions of the preceding article, will request a report thereon from the Department of Fomento rendering its decision in accordance with the information communicated by the latter Department, and issuing to the party interested a certificate covering the purposes specified in the final paragraph of article 4 of the law dated the 6th instant.

Art. 16. For the same purpose, the Concessionaires of Zones who may hereafter incorporate within the limits of such Zones, setts (pertenencias) foreign to those conceded by their contract, are required to present, within eight days subsequent

to that on which they receive notice from the Department of Fomento that such incorporation has been accepted, a declaration in duplicate to the Treasury Department (Secretaría de Hacienda), which latter Department will issue the certificate provided for in the foregoing article.

Annual tax.

Art. 17. The annual Tax referred to in article 4 of the law will be collected by the Stamps Offices (Renta del Timbre) in accordance with the Laws of March 31, 1887 and December 9, 1891 and such others bearing thereon now in force, and is payable in Interior Revenue Stamps (Estampillas de la Renta Interior), the face thereof to bear a stamp, diagonally placed thereon, reading: "MINING TAX" (Impuesto Minero).

Art. 18. The Stamp Officers (Administradores Principales de la Renta del Timbre) will receive, as sole fee, two per cent of the gross amount realized from the sale of stamps for the payment of the annual Mining Tax.

Art. 19. The Stamp Officers (Administradores Principales de la Renta del Timbre) will keep a Register of the Mines situated in their respective Districts, by aid of the data which the Treasury Department (Secretaría de Hacienda) will furnish for that purpose.

Art. 20. The owners or holders of mines will make their payments in the "Principal" or District Tax Office (Administracion Principal ó Subalterna del Timbre) corresponding to that in which such mines may be located; the Treasury Department (Secretaría de Hacienda), however, may modify this rule in instances where it may be deemed equitable and convenient to do so, in such cases advising the General Office (Administracion General), that the latter may transmit information thereof to the proper District Office of the Administracion Principal de la Renta.

Art. 21. The "Principal" Stamp Officers (Administradores Principales de la Renta del Timbre) will require the Sub-of-

fices or Agencies to forward them opportunely the stubbs of the Stamps sold for each mine affixed to pages on which they will state for which mines, respectively, the stamps have been sold, and whether the sale corresponds to the extension of the property detailed on the Titles and indicated on the duplicate thereof returned in accordance with articles 8 and 12.

On the receipt of these pages or sheets by the "Principal" Stamps Officers (Administradores Principales), they will advise the fact to the Treasury Department (Secretaría de Hacienda), to which they will also forward at the end of each Fiscal year, all such stamped pages or sheets received, corresponding to each Mining Negotiation.

Art. 22. Each one of the quarterly payments referred to in article 5 of the Law must be made previous to July 31st. November 30th. and March 31st. of each year. For this purpose, the respective "Principal" Stamp Office (Administracion Principal ó Subalterna del Timbre) will deliver to interested parties a printed ticket or placard containing:

I. The Title or Heading: "Mining Tax" (Impuesto Minero).

II. The name of the State and Municipality to which the office issuing the ticket or placard may correspond.

III. The name of the mine:—number of setts (pertenencias) for which the tax is paid;—municipality in which the same is located;—name of owner or company which may be in possession thereof, and the Registry number of the titles.

IV. The quarterly amount payable.

V. Three blank columns destined to receive the stamps corresponding to each period, which stamps are to be duly cancelled.

The interested parties are required to place the ticket or placard referred to in this article in a visible part of the office of the corporation or owner of the mining properties, with the stamps accrediting the payment affixed thereto.

Art. 23. Upon any quarterly payment becoming due, as provided for in the foregoing article, and upon the Stamp Office

(Administracion Principal de la Renta del Timbre) being advised that such payment has not been satisfied, it will communicate the fact to the "Fomento" Agent in order that the latter may, during one month, fix a notice thereof on the "Bulletin Board" (Tabla de Avisos) mentioned in article 21 of the Regulations of June 25, 1892, which notice, as regards the creditors of the mines, will operate as a citation to avail of the privileges indicated in article 25 of the law of the 4th instant.

The payment of the Tax by these creditors can not be efected until the notice referred to has been placed upon thef "Bulletin Board" (Tabla de Avisos) of the "Fomento" Agency.

Art. 24. If, within the district of any "Principal" Stamp Office (Administracion Principal del Timbre) there should happen to be no "Fomento" Agency to which the notice mentioned in the preceding article can be given, the said Administracion Principal will notify the creditors of the mines through the respective District Court (Juzgado de Distrito), ascertaining previously in the proper commercial Registry Office (Registro del Comercio) the names of such creditors.

Art. 25. Upon the expiration of the terms referred to in the final part of article 6 of the law, and the tax still remaining unpaid, the "Principal" Stamp Offices (Administraciones Principales de la Renta del Timbre) will immediately advise the Treasury Department (Secretaría de Hacienda), in order that the latter may at once declare the loss of the property, and the Department of Fomento dispose of the mine. This ruling will be published in the *Diario Oficial*, (Official Daily).

Art. 26. The notice prescribed in article 7 of the law will be made in writing, by the party interested to the "Principal" Stamp Office (Administracion Principal de la Renta del Timbre) through the proper Local Sub–Office or Agency. The Administracion Principal will advise the Treasury Department (Secretaría de Hacienda) thereof for entry in the Register.

Art. 27. The notifications referred to in Article 8 of the law will be made also as prescribed in the preceding article. The

Administracion Principal will transmit the same to the Treasury Department (Secretaría de Hacienda) that the latter may make entry thereof in the Register and order their publication in the *Diario Oficial* (Official Daily), and effect the necessary liquidation, which it will communicate to the proper Administracion Principal that the latter may return in such instances, the amount which may be due the petitioner.

Art. 28. The Concessionaires of Zones referred to in articles 14 and 16 of this law are required within the first ten days of the fiscal year, to communicate with the Treasury Department, that the latter, while in possession of the documents mentioned in said articles, may issue the voucher exempting them from payment of the Annual Mining Tax (Impuesto anual de Minería) during the current fiscal year.

Transitory provision.

For the present year, only, the payment of the quarterly amount coming due in July next will not be required in that month, but can be made in any day during the months of August, September and October; or the two quarterly payments which will come due on the 30th. of November next, may be effected together previous to that date.

México, June 30 1892.—*Romero.*

NOTE.

The Law of the 6th of June, 1892, provides in article 4th., that payments on the annual tax of $ 10 dollars per sett per annum, shall commence from the first of July of that year, but a subsequent decree postponed the first payment to the first of November of the same year.

Sinaloa.

This State possess more than one hundred mineral districts, the veins of which have been classified by Mr. Frederick Weidner as follows:

1st. Veins of gold in ferruginous rotten quartz, with particles of native gold, at times isolated and independent, such as those of Guabortita, Habal, Mapiri, Minitas and Cohuicahul, but at other times, uniting to form branches in silver veins, as in the cases of Guadalupe de los Reyes and San José de Gracia.

2nd. Veins of silver ore composed of quartz and calcareous spar, containing native silver or sulphurets, antimonial and arsenical silver, with a smaller or larger proportion of gold, as is observed in Guadalupe de los Reyes, Rosario, Pánuco, Copala, Joya and other places.

3rd. Veins of argentiferous galena, composed of sulphurets of lead, zinc, iron and copper, at times containing arsenic, antimony and selenite, with a gangue of quartz, calcareous spar, and ocassionally opaline iron, magnesia or barita, with a great variety of ferruginous ores. Examples of all these can be found in Santa Elena, Barreteros, Topia de Durango, Santiago de los Caballeros, San José de Bocas and San José de Pobres.

4th. Formations of argentiferous pyrites of which examples can be found in the hills of Metates, Favor, Quebrada and Escaleras, all situated to the East of Topia, observing in these veins an intimate mixture of sulphurets of copper, iron and arsenic, mixed with the silver and gold.

5th. A lead formation in which the lead is found in a state of oxide, sulphuret and carbonate, with a gangue of calcareous spar, and ferruginous rocks mixed with silica and manganese. These veins contain silver, but rarely in paying quantities, they also contain galena and white carbonate of lead with a gangue of opaline quartz and a moderate proportion of silver as in the Chichi veins.

6th. A copper formation in whose veins copper predominates, mixed with copper and iron pyrites with a little quartz. Examples of this are seen in Picachos in the Rosario District, in San Isidro and other places. In other parts we have copper pyrites, malachite and silicate of copper as in the Bacamacari vein, or else pure black copper, as observed in some veins in the neighborhood of San Ignacio.

At present there are 107 mines worked in the State, divided among the following districts:

Mazatlan	8 Silver mines.
Culiacan	6 „
Concordia	21 „
Rosario	12 „ and gold.
Sinaloa	17 Gold mines.
San Ignacio	4 Silver mines.
Badiraguato	24 Silver and 2 gold mines.
Mocorito	1 Silver and 1 gold mine.
Cosalá	10 Silver and 1 gold mine.

These mines occupy a total of 2,500 laborers.

The reduction works established in the State are as follows.

DISTRICTS.	Works.	SYSTEM EMPLOYED.	Laborers.
Mazatlan	5	Mills and smelting	120
Rosario	3	Pans	215
Cosalá	10	Pans, patio and smelting	100
Concordia	21	„ „ „	96
San Ignacio	6	Amalgamation and pans	180
Badiraguato	3	Lixiviation	107
Sinaloa	5	Amalgamation and pans	58
Fuerte	8	Lixiviation and pans	110
	61		986

TERRITORY OF TEPIC.

This territory possesses a few mineral districts, which although of great importance are not at present being worked, such as:

The *District of Huitzitzila*, situated to the South of the City of Tepic. Its veins have a direction between North West and West, and carry a mixture of simple and multiple sulphurets diseminated through white quartz. Arsenical pyrites are frequently found associated with these other contents. We have also a great many veins of argentiferous galena, and the metalliferous strata are formed of feldespathic porphiries of many different colors.

District of San José Tatepuzco, situated 25 leagues to the North of Tepic. Its ores contain a fair proportion of silver, and are treated either by the patio process or by smelting.

District of Santa María del Oro, situated to the West of Tepic. Its mines are at present abandoned, their names being "El Carmen," "Refugio," "Majada," etc.

The other silver mining districts are to be found within the Prefecture of Tepic, and they are called, Acuitlapilco, Estanzuela, Chimaltitan, Atenamichi, Mojo–Cuautitlan and Motaje.

JALISCO.

This State is one of the most important in the Mexican Republic, for its natural riches. The fertile and productive plains alternate with steep and broken mountains which are covered with the most exhuberant vegetation and contain rich veins of ores.

The mineral productions of the State may be generally classified as follows:

Argentiferous districts. These are found in the cantons of Sayula, Tolotlan, Ciudad Guzman and Mascota.

Auriferous districts. In the cantons of Ameca and Autlan.

Copper districts. In the cantons of Ameca, Autlan and Mascota.

Ferruginous districts. In the cantons of Lagos, Sayula and Ciudad Guzman.

Quicksilver districts. In the cantons of Lagos and Autlan.

The mineral districts of the State are:

1st. *Mascota*, the principal camps of which are called San Sebastian, divided into the Upper and Lower Camp. It contains 15 mines carrying from 2 to 8 ounces of silver per carga, with only a very slight assay of gold.

This district contains 8 mining towns and 16 establishments for the reduction of ores, on the barrel and mill system.

2nd. *District of Talpa.* This contains the following mining camps: Cuale, with 30 mines, some of which are being worked and others abandoned, the ore being argentiferous galena. Bramador, with 7 mines of silver ores assaying a little gold, and called Red and Black ores. Desmoronado; with 3 mines of red ores. Aranjuez, with 3 mines of yellow ore. Guadalupe, with 3 mines of gold and yellow ores. Ocotitlan, with one mine of black ores. Veladero, with one mine of copper ore.

3rd. *District of Hostotipaquillo.* This district contains the following mining camps, working argentiferous veins which generally are found rich: Hostotipaquillo, with 27 mines; San Pedro Analco, with 9 mines; Santa María Yesca, with 3 mines; Amatlan de Zora, with 3 mines; Ixtlan, with 2 mines; Garabatos, with 1 mine; Etzatlan, with 6 mines, and Ahualulco, with 3 mines.

4th. *Mining district of Tapalpa.* This is situated to the West of Sayula in the mountains of the same name. It possesses abundant beds of silver, iron, lead, copper, quicksilver and coal.

5th. *Mining district of Comanja.* This is situated in the montains of the same name within the canton of Lagos. It contains 55 mines which have been opened in different well defined veins, and produce red and gray hematite iron, argentiferous ores and native silver.

6th. Mineral district of Bolaños, which includes the following camps: Barranco, Tepec and Barrotero, of silver and lead; Pichardo, of silver and copper, and San José de las Bolas of silver.

STATE OF COLIMA.

The State of Colima is essentially agricultural, which is the reason why the silver veins existing in the District of Manzanillo and Villa Alvarez, are as yet undepeloped. For the same reason, no work has been done in the lead and copper veins in the mountains of Juluapan, the iron in the Picila and Ortices ranges, and the sulphur, alum and nitrate contained in the Ranges of La Noria and Ortices.

The salt beds of Cuyutlan, San Pantaleon, Carrizal, Pascuales, Guayabal, Guazango, Tecuan and Caiman, are extensively worked, and their products amount to 112,000 cargas per annum with a value of $336,000.

STATE OF MICHOACAN.

Michoacan is one of the richest and least developed States. It contains numerous and rich veins of silver, lead and gold, copper, iron and cinnabar, the latter being as rich as that found in the mines of New Almaden in California. These valuable deposits are at present unworked for want of capitalists who would undertake the business.

The mining districts produce a remarkable variety of ores and number 32 known Mining Camps, as follows:

Angangueo, with silver, copper, iron and coal.
Apupato, with silver.
Azufral, with sulphur beds.
Cañada de los Alumbres in Tlalpujahua, with cinnabar.
Cármen, with coal.
Coalcoman, with rich iron mines.
Curucupasco, with silver.
Chalchitepec and Chapatuato, with silver.
Churumuco and Chirangangueo, with copper.
Cerro de Guadalupe and Huetamo, with cinnabar.
Espíritu Santo, with silver.
Etucuaro, with iron and copper.

Huacana, with copper.

Inguaran, with silver.

Joya, with silver.

Nucupétaro, with copper.

Ocurio, with coal.

Oxumatlan, with native or sulphureous silver and galena.

Puerto de Cuto, with copper.

San Francisco del Oro, with silver.

San Andrés de Ucares, with beds of sulphur, caparosa and alum.

San Chiqueo and San Pedro Jorullo, with copper.

Sierra Cucha, with silver.

Truchas, with silver lead ores.

Tequicheo and Tuzanta, with silver.

Tlalpujahua, with gold, silver, iron and gray antimony.

The Tuxpam montains, with iron.

Tzirate, with silver.

Rio Zacatula, with coal.

The system of reduction which is employed is that of amalgamation, and numerous establishments are found for the purpose scattered throughout these districts.

Of all the Mining districts above mentioned, those of Tlalpujahua, Angangueo, and Inguaran, are those in which operations, are well established. The mineral district of Tlalpujahua in the district of Maravatío, contains rich veins of gold and native silver, besides other forms, such as sulphureous silver, ruby silver of a dark red color, iron pyrites, brown iron and gray antimony.

In the Angangueo mines situated in the district of Zitácuaro, they work silver, copper and iron.

At Inguaran, situated in the district of Ario, the special products are, iron ore, oxides of iron, clays, and specular iron.

In the neighborhood of the of Volcano Jorullo, between the Hacienda of Puruarán and the mountains, are found abundant deposits of volcanic as well as basaltic and porphyritic lavas.

The copper veins are found in the igneous and metamorphic rocks, the metal presenting itself in the forms of enormous irregular masses or pockets, without any particular dip, and of the most variable character. At other times it is found in true fissure veins with clearly determined walls and a well defined direction. The metal is found in these veins mostly in the upper and lower levels, but rarely found at a moderate depth.

The innumerable and powerful veins, have a matrix of ferruginous quartz accompanied by galena, carbonate of lead, blende and common pyrites. The assays of these ores vary from 14 to 86 per cent of copper and from a few ounces up to one mark of silver per English ton.

In the south eastern part of the State, veins are found containing galena, blende and carbonate of lead, but with very little copper. There are more than 70 mines and tunnels opened but only a few of these are at present worked.

These ores are mostly reduced by reverberatory furnaces, but the process requires so many successive operations that it becomes very slow and imperfect and the establishment of modern works is urgently required.

The expenses incurred on these ores can be estimated as follows:

Expenses of extraction	$ 5 00
Freight to the smelter	0 50
Cost of reduction	3 50
Freight of copper to Santa Clara	0 75
	9 75
Profits	6 45
	$ 15 20

These calculations are based on the carga of 300 pounds.

STATE OF GUERRERO.

This important State of the Republic is one of the richest and at the same time one of the least known with respect to its

mineral riches. Its mountains, throughout the whole State, hold enormous treasures, which, when properly worked will produce immense sums of money.

The most interesting districts of the State of Guerrero are: Tasco, Tehuilotepec and Juliantla, with veins of galena carrying more or less silver, ruby silver, sulphureous silver or black sand, an abundance of yellow and black blendes, pyrites, native silver, gray and yellow copper and gray antimony; Tepantitlan, with gold and silver; Ajuchitlan, with gold, silver, copper, lead and cinnabar; Huitzuco and Pregones, with cinnabar. The gold, silver, iron, copper, lead and cinnabar, are found in many places throughout the State, and in some parts, coal beds are known to exist.

The mines already known in the State, amount to 461, and are distributed as follows:

202 in the District of Alarcon (Tasco), silver, lead, copper, and magistral.

127, in the District of Hidalgo (Iguala), silver, lead and cinnabar.

21, in the District of Aldama (Teloloapam), silver, gold, copper, lead and cinnabar.

1 in the District of Guerrero (Tixtla), silver.

17 in the District of Bravos (Chilpancingo), silver, iron and coal.

3 in the District of Morelos (Tlapa), silver and copper.

1 in the District of Allende (Ayutla), coal.

4 in the District of Tabares (Acapulco), gold, iron and copper.

2 in the District of La Union, coal, copper with silver and argentiferous galena.

1 in the District of Chilapa, silver.

92 in the District of Mina (Coyuca), gold, silver, cinnabar, copper and lead.

According to Don Manuel Anda, there are 4 mineral districts in this magnificent State: Ixtlan, Villa Alta, Teoxomulco and

Peras. The two first are those which produce the greater part of the silver which is coined and exported from the State of Oaxaca, the District of Ixtlan, containing the largest number of mines in operation.

The metalliferous grounds of Ixtlan and Villa Alta are found on the Northern slopes of the great Cordillera, whose summits are formed of enormous masses of feldespathic porphyry, and their formation belongs to the Devonian period, but more frequently to the Silurian. The veins are presented in a very irregular form, both as regards their direction and their dip. The ores consist of sulphurets of silver, arsenical and antimonial sulphurets of silver, native silver, gold, argentiferous galena, acompanied by yellow copper, malachite, quartz and pyrites, which are at times, impregnated with oxide of iron.

The mining districts within the State are as follows:

6 in Ixtlan, Lachatas, Amatlan, Calpulalpam, Totomoxtli, Quistepec and Xiacuí.

5 in Villa Alta, Talca, Yatoni, Yace, Taba and Solaga.

1 in Juquila, Santiago Minas.

13 in Villa Alvarez: Tamazola, Nuxa, Tlazo, Altepec, Tepantepec, Teosacualco, Yocucundo, Camalcua, Santa Inés del Monte, San Pablo Cuatro Venados, San Miguel Peras, San Felipe Zapotitlan and San Juan Elotepec.

1 in Ocotlan: San Jerónimo Tabiche.

1 in Etla: Tlazoljaltepec.

The system employed for the reduction of these ores, is that of amalgamation by the patio process or in barrels, whilst there are two reduction works which concentrate and smelt. There are 27 reduction works established throughout the State, and the following list shows their names and the class of ores which they treat:

6 in Villa Juárez (Ixtlan).

El Rescate, gold and silver.
Cinco Señores, mixed ores.
Santa Ana, gold and silver.

Socorro, gold and silver.
Yavexia, gold and silver.
Santa Anita, gold.

12 in Villa Alvarez (Zimatlan).

Dolores, mixed ores.
San Patricio, silver and lead.
Rosario, gold.
Cármen, gold.
Animas, gold.
Purísima, gold.
Rescate, gold.
Reyes, gold.
San Ignacio, iron.
San Estevan, iron.
La Paz, iron.
Candiani, lead.

3 in Nochistlan.

Purísima, lead.
Soledad, gold.
Guadalupe, gold.

5 in Etla.

Rosario, gold.
San Antonio, gold.
San Miguel, gold.
Refugio, gold.
Contreras, gold.

1 in Villa Alta.

Progreso, silver.

Many salt beds are found in this State, and particularly on the coast, in the districts of Pochutla, Tehuantepec, Juquila, and Jamiltepec. Their annual products can be estimated at 150,000 arrobas.

STATE OF CHIAPAS.

The territory of this distant State of the Federation, has never been explored by any scientific commission, which could give us reliable information with respect to its mining capabilities. From private sources it is known that the valley of Custepeques and the district of Soconusco contain valuable mineral deposits of gold and copper, and that the stream which passes through Chicomuselo carries gold, as well as that these placers are to be found in various parts of the Sierra.

In the valley of San Cristobal, there is an abundance of lead, iron and talc, but the mines from which these metals have been extracted are at present abandoned.

Load stone is found in Tzementon, situated in the district of San Bartolomé or Libertad.

Sulphur, sulphate of soda, asphalt and many other substances are found in different parts of the State.

Lastly, the extensive beds of salt which are found in the valley of Custepeques as well as the coasts of Tonalá and Soconusco, are worked to a very large extent and export salt to other parts of the coast and abroad.

MIDLAND STATES.

STATE OF DURANGO.

The Sierra Madre, which acquires a remarkable width in this State and that of Sinaloa, contains innumerable and valuable veins of metal, and a very large number or mines are worked which produce considerable quantities of valuable ores.

The principal mining districts of this State are as follows:

Indé, producing galenas and other argentiferous ores, some in the form of sulphurets.

El Oro, with alluvial gold deposits and veins, some of these latter containing arsenical pyrites with a high grade of gold.

Guanaceví, metalliferous porphyries with veins of sulphureous silver.

Coneto, containing tin.

Parrilla, with colored ores containing chlorides and bromides of silver as well as argentiferous galenas.

San Dimas, clear ruby silver associated with sulphureous silver.

Birimoa, sulphureous and antimonial silver.

Topia, argentiferous galena.

Pueblo Nuevo, is a recently explored zone, containing copper, lead, iron, manganese, zinc, silver and gold.

Close to the City of Durango itself, is found the inexhaustible bed of iron ore known under the name of "Cerro del Mercado." The mineral resources of the State of Durango, as well as of the other rich States of Zacatecas, Hidalgo and others, that occupy the central part of the Republic can be further studied by consulting the following works: Annals of the Department of Fomento, Vol. V, Historical Mines of the Republic, by Charles B. Dahlgren and Mineral Riches by Don Santiago Ramírez.

STATE OF SAN LUIS POTOSÍ.

The most important mining districts in this State are the following:

Catorce, situated in the mountain of the same name, whose principal veins are very rich and extensively worked. They are called, La Purísima, San Agustin, San Jerónimo, San Ramon, Los Frailes and Maroma. The ores can be classified under three heads, native silver in pebbles and plates, chloride of silver or horn silver; sulphureous, fuliginous or powdered silver ore. The mineral district of Catorce extends as far as the Cerro de los Frailes, in the immediate neighborhood of Matehuala, where the principal reduction works are to be found.

Guadalcázar. According to D. Santiago Ramírez, the veins of this district belong to three systems; that of Minas Viejas, to the East of the Cerro San Cristobal, containing silver ores; that of San Juan to the North West of the same hill, containing a mixture of argentiferous galena with gray silver, and other forms of that metal; and that of San Juan to the South of the same hill, which contains silver associated with galena and white lead, forming good fluxing ores. Besides these the mines contain other forms of silver adapted to the Patio process, and others associated with copper. Besides the above mentioned, there are several valuable beds of cinnabar found in Guadalcázar, one of which is in the important mine of La Trinidad, where the cinnabar is found of a dark color, associated with gray lead.

In the District of San Luis, we have the important mines of San Pedro and Bernalejo. In the first of these two the ore is found in bunches or pockets associated with iron, manganese, lead, calcium, barium, arsenic and gold. In the second mine a large number of veins of silver are worked.

In the district of Charcas, exist mines of fuligenous and sulphureous silver as well as horn silver, they also extract black ores which are called antimonial and sulphureous silver and some galena.

In the district of Ramos, sulphureous and native silver is produced, red and dark ruby silver, and gray copper impregnated with pure silver.

Peñon Blanco, is an important district on account of its abundant deposits of salt, which are extensively worked. Amongst them we have Laguna del Tapado in the district of Moctezuma, and the salt beds of Concordia and Santo Domingo which produce Glauber salt.

STATE OF ZACATECAS.

The mineral districts which exist in this rich part of Mexican Territory, are as follows:

Zacatecas, Veta Grande, and Pánuco, in the Zacatecas ranges: Fresnillo, at a distance of 15 leagues to the North of the City of Zacatecas; Sombrerete and Chalchihuites.

I. Zacatecas, situated in the mountain range of the same name, contains innumerable veins crossing it in all directions and containing ores of sulphureous silver, ruby silver, native silver, galena of all classes, brown, black and yellow blende, whilst argentiferous and sulphureous pyrites are found in great masses of handsome crystals.

II. Veta Grande, is situated in the same mountains, two leagues to the North of the City. The extensive and rich vein that has produced fabulous sums to the miners, is of great width and produces cristalized sulphureous silver, native silver in blocks, leaves and threads, dark ruby silver, silver sand, galena, carbonate of lead and different colored blendes besides many classes of ores too numerous to mention.

III. El Pánuco, is also situated in the same ranges but still farther North, and possesses a combination of mineral veins with a high grade of silver and gold. Amongst these, the most famous is the Veta de los Tajos, one of the first to be worked by the Spaniards.

IV. Fresnillo is situated 15 leagues to the North of Zacatecas. In this district is a hill called Cerro de Proaño containing more than a hundred veins which have been worked from the surface and have produced an abundance of native silver, horn or green silver, antimonial and arsenical silver, sulphureous silver, black silver, dark ruby silver, galena, black and purple blende, gray antimony, copper and iron pyrites and in some cases virgin gold.

V. Sombrerete, is situated on the road to Durango, 36 leagues North of the City of Zacatecas and on the boundaries of the State. The conical hill which is called Cerro del Pabellon, contains the veins of Pabellon, Veta Negra and San Lucas, with numerous mines, from which have been extracted gold, silver, lead, iron and zinc. The Sombrerete mining Company, posses-

ses a zone consisting of an irregular poligon with seven sides, and within which it works the three veins mentioned above. The mine of San Francisco, has a weekly output of 82 tons of ore of two classes, the first being exported to the United States with the following assays: 60 to 70 per cent of lead, a little gold and 90 ounces of silver per ton, whilst the second class is reduced on the spot by the lixiviation system, and has a mean assay of 39 ounces of silver per ton.

VI. Chalchihuites, is situated 3½ leagues to the South of the former district. It contains a great many veins of lead ores which are very valuable as fluxes.

VII. Mazapil is situated in the Sierra of the same name, on the Northern border of the State. This range of mountains connects with others containing the mineral districts of Albarradon, Cedros, Bonanza, Concepcion del Oro and Rosario and is prolonged to the westward by the Pico de Teyra, which also produces a great variety of ores in which the gold largely predominates. The mineral district of Mazapil contains numerous veins and a large number of mines which have produced gold and silver, copper, in the form of malachite, blue and yellow copper. It also contains brown magnetic and specular iron; lead, quicksilver in its native form and as cinnabar, zinc, sulphur, blende and arsenic.

VIII. Pinos is situated 30 leagues to the East of the City of Zacatecas. Its veins are very remarkable on account of the high grade of its ores, which contain native gold and green silver mixed with gold.

IX. Noria de Angeles. This district is situated 12 leagues to the westward of the last named. Its ores consist of a mixture of galena and arsenical pyrites, which are treated by smelting and amalgamation, according to their grade. Previous to this treatment they are concentrated and roasted in a reverberatory furnace.

STATE OF AGUASCALIENTES.

This State of the Union contains the rich mineral districts of Asientos and Tepezalá. The former was celebrated in former times for the bonanza produced by its principal mines of Descubridora, Santa Francisca, Romana, Santo Cristo, Cinco Señores and No Pensada. Its mountains are of a calcareous formation with porphyry on the summits, and contain veins of silver in their different forms of sulphurets, dark ruby silver, chloride of silver, besides galena and copper, double sulphurets of copper and many other metals. The mineral district of Tepezalá in which copper smelting works are established, produces an excellent quality of magistral, besides a superior class of copper, tin and lead.

STATE OF GUANAJUATO.

Guanajuato, which is as rich in mineral productions as Zacatecas, has always been a great mining centre. This important locality contains five mining districts, which are: Guanajuato, Leon, Sierra Gorda, Allende and Santa Cruz. The first of these contains the richest mines, and they are situated on the hill between the Cerro del Nayal and El Cubo as far as El Gigante, and from Marfil, Cubilete and La Luz to Villalpando and Santa Rosa, forming a district 40 kilometres in length by 36 in width. The mines of Guanajuato were discovered in 1548, and the vein of San Bernabé, near El Cubilete was the scene of the first works. Ten years afterwards, the Veta Madre vein was discovered, and on it were successively opened the mines of Valenciana, Tepeyac, Cata, Santa Ana, Santa Anita and others. The substances which constitute the matrixes of this great vein are common quartz, calcareous spar, and horn blende, whilst its argentiferous ores are in the form of sulphureous silver, native silver, prismatic and dark red or black silver, a light colored ruby silver, sometimes semi-prismatic, argentiferous galena, iron and copper pyrites, the argentiferous

ores sometimes containing native gold. Later explorations have led to the discovery of other minerals such as stream tin and bismuth.

The District of Sierra Gorda extends over an area of 1,158 square kilometres of country containing minerals of different classes. Some of these deposits are of poor quality but capable of producing large amounts, but in some places, blocks are found of pure cinnabar. In the District of Atarjea, numerous veins of argentiferous lead are being worked, and in that of Pozos, the products mostly consist of carbonate of copper.

STATE OF QUERÉTARO.

According to Don Mariano Bárcena, the geographical distribution of the minerals in the State of Querétaro, can be considered as concentrated in certain special points which are: Las Aguas, El Doctor, Toliman and San Antonio Bernal, which contain gray copper, native and sulphureous silver. The hills of San Nicolás and San Antonio contain lead ores, whilst the same hill of San Nicolás and a large zone to the westward of itself towards the Mesa de los Pozos, contains cinnabar, and the Hacienda de la Esperanza produces a largequantity of fine opals.

The mineral zone of Rio Blanco in the district of Toliman has a superficial area of 30,000 hectaras, of which 6,132 properly belong to the mineral zone of Atarjea. The principal work is now being carried out in the mine of Nueva California which produces gold in a matrix composed of oxides of iron, calcareous spar, fluor spar, and ocassionally garnets. Cinnabar is extracted from the mines of New Almaden, and its reduction is very economical from the abundance of fuel in that region.

STATE OF HIDALGO.

The principal mining districts in the State of Hidalgo are Pachuca, Real del Monte, Atotonilco el Chico and Zimapan,

the first three being situated in the mountains of Pachuca and the last in those of Zimapan.

The numerous argentiferous veins that are found in the metalliferous porphyry of the Pachuca mountains, in which the first three districts are situated, contain native silver, sulphureous silver, malleable silver, ruby silver, yellow copper and pyrytes which at times are very rich in silver. In descending from the surface to the interior of a mine in Pachuca, three distinct formations are noted in the veins: the first is accompanied by manganese in state of "Psilomelan," "Pirolusite" and other varieties of these, the ores of this class being called "Quemazones" or roasting ores; in the second, the minerals are stained by the oxide of iron and are called "colorados" or red ores, whilst in the third the quartz is mixed with sulphureous silver giving it a bluish color, for which reason it is called "Pinta Azul" or blue ore.

The principal and most famous mines of this interesting district, are El Rosario, Cuautimotzin, San Pedro, El Jacal, Candado, Porvenir, La Corteza, Santa Gertrudis, Trompillo, Concordia, Amistad, Potosí, Maravillas, San Buenaventura, Pabellon, Sacramento, San Cayetano, El Cristo, Guadalupe, Encino and many others in Pachuca; Vizcaina, Moran, Santa Inés, Valenciana, Rosario, Santa Brígida and others in Real del Monte; Arévalo, San Antonio, San Marcial, Compañía, Capula, Tetitlan, Santa Ana, San Isidro, and others in the district of Atotonilco el Chico. Of all these mines, the ones which are at present giving the largest extraction, are Santa Gertrudis, Maravillas and Trompillo.

The mineral products of Zimapan, a town situated 120 kilometres to the west of Pachuca, are: an abundance of argentiferous galenas, and gray copper, whilst oxides and carbonates of lead, are not scarce. All these lead ores are very useful as fluxes for smelting silver. Besides the districts above mentioned, the State of Hidalgo contains the following: District of Potosí, situated in the jurisdiction of Atotonilco el Chico, but whose

veins are not at present worked as they have been lost. District of Jacala, 40 kilometres to the North of Zimapan, which produces gold, silver, carbonate of lead, magnetic iron, oxides of manganese and carbonate of copper.

The systems of reduction employed in the mines of this State, are those of amalgamation by the Patio process and in barrels, as well as that of smelting, and for these purposes large and well appointed establishments have been set up.

STATE OF MÉXICO.

The State of México contains the following mining districts: El Oro, Temascaltepec, Sultepec and Zacualpam. The first of these districts produces native gold, native silver, sulphureous silver, gray silver, powdered silver ore, bromide and chloride of silver, oxides of iron and manganese.

The rich mineral district of Temascaltepec, produces a great variety of metals, such as native silver, silver mixed with gold, sulphureous silver, galena and argentiferous pyrites.

In Sultepec, the extraction includes, gold, silver, copper, iron and lead.

And lastly, the district of Zacualpam, which is no less rich than the others, produces: clear and dark ruby silver, sulphureous silver, native silver, black and gray blende, galena, copper pyrites, and gray antimony, but the principal value of its veins, consists in the ruby silver and sulphureous silver.

STATE OF PUEBLA.

The principal mining districts of this important State, which have hitherto been very much neglected, are as follows: district of Temextla, which is united by the Sierra de Tlatlauqui with that of Zomelahuacan, in Veracruz, and produces nearly pure gold, as well as galena, with a good proportion of silver and copper.

The hills of Xochiapulco and Xochitlan contain an abundance of zinc.

District of Tetela. This is the oldest and most important mineral district in the State, situated 92 kilometres to the N. N. E. of the Apizaco Junction. The Cerro del Convento, which is the richest, produces gold in narrow threads contained in the quartz, or in small grains scattered throughout the matrix. It also produces silver of two classes, known under the names of "polvorilla" and "jaboncillo." The district of La Preciosa, in the neighborhood of Chalchicomula, contains some rich veins of silver.

In the district of Matamoros and in the neighborhood of the villages of Culuacan and Colotlan, veins of lead and silver are known to exist, whilst the districts of Acatlan and Chiautla, contain valuable veins of gold, silver, iron and marble.

Coal beds are known also to exist in the districts of Matamoros, Chiautla and Acatlan, in close proximity to veins of iron ore.

And lastly, the district of Tehuacan is known to contain extensive deposits of the precious metals and of fine marbles, and the same may be said of Atlixco, Matamoros and Tecali. This last town is famous as the first from which was extracted the beautiful onyx for which this State is so celebrated, and whose exportation is now assuming important proportions.

STATE OF TLAXCALA.

This State is essentially agricultural, but amongst its mountains are found a few mineral deposits, and the principal ones discovered up to this date, are the following:

In the village of San Antonio, in the district of Hidalgo are found veins of silver and gold, besides lime stone impregnated with the same metals.

In the village of Temetzontla, belonging to the Municipality of Tlaxcala, we have a vein of silver ore which assays a little gold.

In a gully near the village of San Márcos Huexoyucan, veins

of silver and iron have been discovered. In Tizatlan, belonging to the Municipality of Tlaxcala a mine of chalcedony exists.

In the country between the villages of Huexoyucan and Temezontla, in the district of Hidalgo, coal beds have been discovered.

STATE OF MORELOS.

The only mineral zones worthy of the name in the State of Morelos, are those of Huautla and Oastepec. The district of Huautla is situated 12 leagues to the South of Cuautla Morelos, and has five mines, which are: Tlachichilpa, in the Cerro Frio, which produces a conglomerate charged with silver assaying 13 marks per carga. San Esteban is situated in the same hill, producing galena, which assays one a half marks per carga; San José, in the same place gives galena, with 10 marks per carga. Concepcion which is situated in the Cerro de las Animas, gives an equal production, and the same may be said of La Peregrina, situated as a point called Salitre. The system followed for reducing these ores, is that of amalgamation.

The hill of Oastepec, in the district of Yautepec, yields ores of argentiferous galena.

The Municipal district of Cuernavaca contains a range of hills called Barriga de Plata, in which were formerly worked a number of silver mines.

In Jiutepec, there is another hill which is almost entirely formed of carbonate of lime, a handsome marble with beautiful veins formed by the different oxides contained, and accompanied by selenite of a very good class.

Cinnabar is found in different parts of the State and particularly in Santa Rosa, in the Municipal district of Tlaquiltenango.

We have above shown the principal mineral products of Mexican territory, as well as the most important mineral districts, but without entering into any great detail, which would

make this work unduly extensive. At the same time, any of our readers who may feel a sufficient interest in the matter and who desire to obtain further information on the subject will find it worth their while to study the "Atlas General Mexicano," compiled by the present writer; the reports by the same author which have been presented to the Department of Fomento and published in Vol. V. of the Annals of that Department; the "Riqueza Minera de México" by Don Santiago Ramírez, "El Minero Mexicano," the "Minas Históricas," by Charles S. Dahlgren, and the "Boletin de Agricultura é Industria," published by the Department of Fomento.

Besides the above mentioned productions, the territory of the Republic contains abundant veins of magistral, sulphur, particularly in the extensive beds of Popocatepetl, Pico de Orizaba and Tajimaroa; different kinds of salts, and especially chloride of sodium in the salt beds of Peñon Blanco, of San Luis Potosí, and in many places along the coast. There are also extensive beds of rock cristals, different kinds of marbles and jaspers, valuable beds of building stone, and the handsome onyx of Tecali. Amongs the precious metals we have the opal with its beautiful colors in the Hacienda de Esperanza (Querétaro), the garnet, the topaz, the emerald, the agate, and the amethyst.

Through the surveys made by order of the Department of Fomento and through the claims frequently presented, it is known that beds of cinnabar, of coal and a few of platinum, are to be found in many parts of the country.

The system of reduction generally employed throughout the country is that of amalgamation by the Patio process, which was discovered in 1557, in Pachuca, by the Mexican miner Bartolomé de Medina. This process, which is also called cold amalgamation, combines simplicity and economy with the advantage of treating large quantities of ore, and is the best adapted to the treatment of low grade ores. The system of amalgamation in barrels is also employed, being applied to the

treatment of tailings and ores that contain pyrites or manganese. Another process which is employed is that of vats or hot amalgamation, and is only employed in the treatment of chlorides, bromides and iodides of silver. Smelting is employed in the States of Sonora, Sinaloa and Chihuahua for the reduction of rich ores containing lead, and in certain determined cases, lixiviation is resorted to.

The most notable reduction works in the country, are those of Pachuca, Real del Monte, el Chico, Guanajuato, Zacatecas, Fresnillo, Sultepec, Temascaltepec, El Oro, Zacualpan, and a few more.

The following tables show the extraction of the precious metals in the different States of the Republic, during the financial year of 1890 and 1891, enabling the reader to form a very good idea of the respective importance of this industry in each State.

State of Aguascalientes.		Gold.	Silver.
Tepezalá.....	$	„ „	1,044 02
State of Coahuila.			
Sierra mojada.....	$	„ „	8,366 94
State of Chiapas.			
General.....	$	400 27	2 89
State of Chihuahua.			
Batopilas.....	$	6,626 24	1.013,623 57
Cerro Colorado.....		2,273 34	11 85
Dolores.....		„ „	345 72
Galeana.....		1,164 83	594 22
Guadalupe y Calvo.....		84 61	1,304 05
Jesus María.....		45,980 16	93,883 10
Orpinedas.....		176 28	1,345 46
Parral.....		„ „	289,307 58
Carried forward.....	$	56,705 73	$ 1.409,829 40

	Gold.	Silver.
Brought forward.....	56,705 73	$ 1.409,829 40
Urique.....	„ „	143,087 47
Uruachic.....	„ „	703,366 00
Uruapan.....	9,782 77	19,872 86
Zapuri.....	„ „	24,642 46
Other Districs.....	1,696 34	12,248 31
$	68,184 84	$ 2.313,246 50
State of Durango.		
Amaculi.....	„ „	2,290 18
Arzate.....	„ „	33,487 36
Avino.....	„ „	103,411 47
Birimoa.....	62 25	28,177 22
Candelaria.....	„ „	352 06
Candelero.....	„ „	137 59
Canelas.....	532 26	25,838 79
Cantarranas.....	„ „	105,796 07
Coneto.....	„ „	8,953 46
Copalquin.....	2,834 02	33,324 77
Cuencamé.....	„ „	21,157 30
Chacalá.....	„ „	245 96
Gavilanes.....	„ „	18,466 81
Guanaceví.....	„ „	35,159 43
La Paz.....	„ „	346 07
Mapimí.....	„ „	411 19
Mezquital.....	„ „	338 80
El Oro.....	„ „	954 77
Parrilla.....	„ „	537 12
Promontorio.....	„ „	445 88
Pueblo Nuevo.....	20 97	1,355 39
San Andrés.....	„ „	492,581 77
San Dimas.....	82 34	1,487 91
San Juan de Guadalupe.	669 27	17,750 55
Santa Cruz.....	„ „	2,936 07
Santiago Papasquiaro...	„ „	19,245 58
Carried forward..... $	4,201 11	$ 955,189 57

	Gold.	Silver.
Brought forward.....	$ 4,201 11	$ 955,189 57
Siánori.....	97 61	11,587 38
Tamazula.....	„ „	7,654 38
Tejamén.....	„ „	157,075 55
Topia.....	„ „	165,833 77
Vacas.....	„ „	90,700 11
Ventanas.....	„ „	149,100 98
Zapioris.....	360 35	25,723 77
Durango [City].....	„ „	136,950 75
Sub Treasury.....	„ „	5,900 07
Other districts.....	834 00	142,983 19
	$ 5,493 07	$ 1.848,699 52
State of Guanajuato.		
State in general.....	$ 379,383 87	$ 4.204,850 83
Banco Nacional.....	„ „	6,575 67
	$ 379,383 87	$ 4.211,426 50
State of Guerrero.		
State in general.....	289 59	432,801 75
State of Hidalgo.		
Pachuca.....	$ 27,616 40	$ 6.166,106 73
Zimapan	583 04	90,893 57
	$ 28,199 44	$ 6.257,000 30
State of Jalisco.		
Ajijic.....	$ „ „	1,910 14
Analco.....	„ „	52,993 17
La Bautista.....	„ „	13,275 05
Bolaños.....	„ „	38,968 44
Bramador.....	„ „	17,167 28
Cacoma.....	„ „	4,532 89
Cuale.....	„ „	106,820 87
Carried forward.....	$ „ „	$ 235,667 84

	Gold.	Silver.
Brought forward.....	„ „	$ 235,667 84
Desmoronado.....	„ „	34,998 77
Etzatlan.....	„ „	151,973 31
Hostotipaquillo.....	„ „	180,873 62
Parnaso.....	„ „	778 31
Reyes.....	„ „	19,157 47
San Sebastian.....	1,333 95	129,483 94
Santo Tomás.....	„ „	6,662 29
Sayula.....	155 73	884 41
Tecalitlan.....	„ „	5,387 78
Guadalajara.....	222 89	6,193 05
Sub Treasury.....	„ „	8,927 35
Other Districts.....	5,242 19	28 87
$	6,954 76	$ 781,027 01
State of Mexico.		
State in general..... $	1,725 30	339,271 35
State of Michoacan.		
Trojes.....	„ „	$ 151,695 14
Other Districts.....	3,642 39	167,989 78
$	3,652 39	319,684 92
State of Morelos.		
Huautla..... $	„ „	10,673 39
State of Nuevo Leon.		
State in general..... $	„ „	10,347 65
State of Oaxaca.		
Cinco Señores..... $	„ „	1,546 06
Ixtlan.....	3,119 81	9,804 20
Peras.....	5,878 85	115 87
Talea.....	„ „	40,088 96
Carried forward..... $	8,998 66	$ 51,555 09

	Gold.	Silver.
Brought forward.....	$ 8,998 66	$ 51,555 09
Taviche.....	1,442 48	31,156 30
Teitipac.....	„ „	7,422 45
Totolapa.....	„ „	60,716 18
Totomochapa.....	„ „	2,379 50
Yolox.....	„ „	1,157 35
City of Oaxaca.....	„ „	3,666 64
Old coin.....	„ „	67,562 06
Other Districts.....	9,930 94	10,995 85
	$ 20,371 58	$ 236,611 52
State of Puebla.		
State in general.....	$ 14,310 14	17,507 73
State of Querétaro.		
State in general.....	$ 1,251 67	31,817 87
State of San Luis.		
Catorce.....	$ „ „	880,612 03
Charcas.....	„ „	285,650 88
Guadalcázar.....	„ „	12,686 21
Matehuala.....	„ „	187,013 65
Old coin.....	„ „	13,108 48
Other Districts.....	4,083 84	25,054 72
	$ 4,083 84	$ 1.404,125 97
State of Sinaloa.		
Aldama.....	$ 205 60	1 49
Bacubirito.....	2,705 21	2,465 37
Badiraguato.....	34 49	2,144 89
Cosalá.....	1,258 56	85,307 80
Cuates.....	148 93	44,878 36
Cumbres.....	133 07	15 02
Mazatlan.....	1,243 45	2,193 50
Carried forward.....	$ 5,729 31	$ 137,006 43

	Gold.	Silver.
Brought forward.....	$ 5,729 31	$ 137,006 43
Pánuco.....	1,100 89	19,798 77
La Rastra.....	„ „	1,887 48
Sapuri.....	„ „	337 51
San Darío.....	„ „	1,208 28
San Ignacio.....	„ „	477 87
San José de Gracia.....	440 43	224 02
San José de las Bocas..	„ „	558 71
San Lorenzo.....	472 54	72,198 84
Santa Cruz.....	„ „	13,479 89
Santiago.....	78 59	1,038 62
Sinaloa.....	259 85	6,405 51
Yedras.....	„ „	172,430 98
Culiacan.....	„ „	261 61
Old coin.....	„ „	22,812 63
Other Districts.....	274 14	3 36
	$ 8,355 75	$ 450,160 51
State of Sonora.		
Aduana.....	$ „ „	58,622 91
Barranca.....	„ „	221,975 72
Baucari.....	6,499 90	9,537 23
Cármen.....	„ „	4,648 73
Guijas.....	„ „	2,200 04
Haciendita.....	„ „	4,161 39
Prietas.....	965 44	3,255 03
Promontorio.....	„ „	118,076 16
San Javier.....	„ „	13,702 46
Santa Elena.....	14,774 32	26,396 59
Soyopa.....	„ „	2,492 22
Trinidad.....	10 23	169,113 79
Velera.....	„ „	2,606 38
Yeso.....	„ „	71,569 15
Zubiate.....	„ „	1,965 19
City of Hermosillo.....	287 62	77,020 14
Old coin.....	„ „	3,185 43
	$ 22,537 51	$ 790,957 56

		Gold.	Silver.
Lower California.			
Territory in general.....	$	332 70	1 21
Tepic.			
Jora Viejo.....	$	„ „	2,575 25
Yesca.....		2,213 34	154,301 60
Zopilote.....		„ „	207,205 70
	$	2,213 34	$ 364,082 55
State of Zacatecas.			
Chalchihuites.	$	8,918 01	135,379 95
Fresnillo.....		134 50	228,342 40
Jerez.....		„ „	97,014 92
Juchipila.....		157,263 86	916 78
Mazapil.....		60,244 13	67,053 75
Mezquital del Oro.....		13,721 75	„ „
Minillas.....		„ „	3,137 93
Nieves.....		„ „	7,259 90
Noria de Angeles.....		1,585 66	13,359 91
Ojo Caliente.....		„ „	73,255 24
Pánuco.....		„ „	43,495 62
Pinos.....		32,946 65	108,957 67
Sombrerete.....		597 20	71,980 18
Tlaltenango.....		„ „	8,082 45
Veta Grande.....		„ „	289,087 46
Villanueva.....		„ „	5,493 10
Zacatecas.....		67,530 81	2.680,941 94
City of Zacatecas.....		5,864 47	185,578 71
Banco Nacional.....		„ „	990 47
Other Districts.....		1,545 76	95,564 06
	$	350,352 80	$ 4.116,002 44
Total receipts of precious metals in the mints.....	$	1.089,702 32	$ 24.814,782 38

Summary, showing the receipts of precious metals in the mints during the year 1890 and 1891 from all sources.

	Gold.	Silver.
Mint of Alamos..... $	22,919 14	492,893 35
„ Culiacan.....	15,389 16	812,522 20
„ Chihuahua.....	45,980 16	2,034,432 28
„ Durango.....	381 32	1.303,027 43
„ Guadalajara.....	24,824 92	1.694,151 22
„ Guanajuato.....	379,783 87	4.209,509 02
„ Hermosillo.....	16,027 38	577,246 45
„ Mexico.....	245,378 43	8.066,544 73
„ Oaxaca.....	10,440 64	225,615 67
„ San Luis Potosí.....	„ „	1.379,899 77
„ Zacatecas.....	328,577 30	4.018,940 29
$	1.089,702 32	24,814,782 38

COINAGE.

Mexico Mint, established by Royal Decree on the 11 of May, 1535, fourteen years after the conquest of the country by the Spaniards. Inaugurated in 1537.

CLASSES OF COIN.	Gold.	Silver.	Total.
Macuquina [1537-1731]..... $	8.497,950	752.067,457	760.565,407
Pillar coin [1732-1771].....	19.889,014	441.629,211	461.518,225
Bust coin [1772-1821].....	40.329,866	869.216,948	909.546,809
Total of colonial period * $	68.716,830	2,062.913,611	2,131.630,441

Independence [1822-1891].

CLASSES OF COIN.	Gold.	Silver.	Total.
Imperial Iturbide [1822-1823]	505,536	8.605,601	9.111,137
Eagle [Republican] [1824-91]	15.620,286	152.102,098	267.722,384
Total of Mexico Mint..... $	84.904,233	2,342.968,356	2,427.872,581

* Including $ 10.699,808 silver recoined from 1754 to 1821.

Zacatecas Mint.

Commenced work 14th. November 1810.

CLASSES OF COIN.	Gold.	Silver.	Total.
Colonial period [1810–1821].	,,	16.919,521	16.919,521
Independence [1822–1823]...	,,	6.497,609	6.497,609
Republic [1824–1891].....	1.541,259	306.482,067	308.023,326
Total of Zacatecas Mint..... $	1.541,259	329.899,197	331.440,456

Guanajuato Mint.

Established in 1812 and closed in 1813, reopened in 1821 to provide the Insurgent Army with the necessary funds.

CLASSES OF COIN.	Gold.	Silver.	Total.
Colonial period, 1812, 1813 and 1821.....	,,	602,575	602,575
Independence [1822–1828]...	,,	892,586	892,586
Republic [1824–1891].....	20.834,385	267.201,936	289.531,482
Total of Guanajuato Mint.	20.834,385	268.697,097	288.036,321

San Luis Potosí Mint.

Established in 1827.

CLASSES OF COIN.	Gold.	Silver.	Total.
Independence [1827–1891]...	,,	108.288,675	108.288,675

Guadalajara Mint.

Established in 1812.

CLASSES OF COIN.	Gold.	Silver.	Total.
Colonial period [1812–1821]..	61,581	2.058,388	2.119,969
Independence [1822–1823]...	51,856	1.614,144	1.666,000
Do [1824–1891]...	788,642	54.996,467	55.785,109
Total of Guadalajara Mint. $	902,079	58.668,999	59.571,078

Chihuahua Mint.

Established in 1811.

CLASSES OF COIN.	Gold.	Silver.	Total.
Colonial period [1811–1814]..	,,	3.603,660	3.603,660
Independence [1832–1891]...	1.685,312	45.701,699	47.387,011
Total of Chihuahua Mint.. $	1.685312	49.305,359	50.990,671

Durango Mint.

Established in 1811.

CLASSES OF COIN.	Gold.	Silver.	Total.
Colonial period [1811–1821]..	,,	5.810,960	5.810,960
Independence [1822–1823]...	,,	965,629	965,629
Do [1825–1891]...	3.595,462	56.517,286	60.112,788
Total of Durango Mint..... $	3.595,462	62.793,915	66.389,377

Culiacan Mint.

Commenced work in 1846.

CLASSES OF COIN.	Gold.	Silver.	Total.
Independence [1846–1891]... $	5.832,288	35.033,921	40.866,209

Hermosillo Mint.

Commenced work in 1867.

CLASSES OF COIN.	Gold.	Silver.	Total.
Indepeendnce [1867–1891]... $	508,394	13.388,615	13.897,009

Alamos Mint.

Commenced work in 1868.

CLASSES OF COIN.	Gold.	Silver.	Total.
Independence [1868–1891]... $	562,199	19.078,386	19.640,585

Oaxaca Mint.

Commenced work in 1859.

CLASSES OF COIN.	Gold.	Silver.	Total.
Independence [1859–1891]... $	739,101	4.741,794	5.480,895

Sombrerete Mint.

Commenced work in 1810, closed in 1811, reopened in 1812 and finally closed within the same year.

CLASSES OF COIN.	Gold.	Silver.	Total.
Colonial period [1810–1812]... $	,,	1.551,249	1.551,249

Guadalupe y Calvo Mint.

Established in 1840 by decree of Congress. Commenced work in 1844, and closed in 1850.

CLASSES OF COIN.	Gold.	Silver.	Total.
Independence [1844–1850]... $	2.311,104	2.063,958	4.375,062

Tlalpam Mint.

Established by decree of the Legislature of the State of Mexico in 1827; commenced work in 1828 and closed in 1830.

CLASSES OF COIN.	Gold.	Silver.	Total.
Independence [1828–1830]... $	203,544	959,116	1.162,660

Catorce Mint.

In the report presented by the Secretary of Fomento for the year 1866, it appears that this mint coined during the year 1865, in silver. $ 1.321,545.

GENERAL SUMMARY.

CLASSES OF COIN.	Gold.	Silver.	Total.
Colonial period [1537–1821].. $	68.778,411	2,092.959,964	2,161.738,375
Independence [1822–1891]...	54.779,368	1,186.448,172	1,241.227,540
Total..... $	123.557,779	3,279.408,136	3,402.965,915

SUMMARY BY CLASSES OF COIN.

CLASSES OF COIN.	Gold.	Silver.	Total.
1537–1731. Macuquina coin. $	8.497,950	732.067,457	760.565,407
1732–1771. Pillar coin.....	19.889,014	441.629,211	461.518,225
1772–1821. Spanish Bust coin	40.391,447	899.263,296	939.654,743
1822–1821. Iturbide coin.....	557,392	18.575,569	19.132,961
1824–1891. Republican Eagle coin.....	54.221,976	1,167.872,603	1,222.094,579
$	123.557,779	3,279.408,136	3,402.965,915

The last period includes the coinage during the Government of Maximilian.

The coinage of copper money amounts to $ 6.749,405 as follows:

In the colonial period	$ 542,893
Independence	6.206,512
	$ 6.749,405

The exportation of precious metals during the financial year of 1890–91, was as follows.

Silver ores	$ 8.874,457 24
Foreign gold coin	20,594 00
Mexican gold coin	134,219 00
Gold bullion	612,619 12
Foreign silver coin	229,806 85
Mexican silver coin	17.622,171 10
Silver mixed with gold	729,134 81
Silver bullion	6.751,219 07
Sulphurets of silver	1,280,768 97
Slag	1,382 00
	$ 36.256,372 16

XII

RAILROADS.

From data furnished by the Department of Communications and Public Works.

Amongst the important improvements which have been carried out in the Mexican Republic, Railroads have been considered as occupying the first place. Their initiation dates from the year 1837, when a concesion was granted to Don Francisco Arrillaga for the construction of a road which was to unite the Port of Veracruz with the Capital. The natural difficulties of this important work and the disturbed state of the country, prevented the immediate realization of this great undertaking, which was not finished until the first of January, 1873, when it was solemnly and officially opened to traffic.

MEXICAN RAILROAD.

[*Standard gauge, Steam traction*].

This road is of the greatest importance, not only on account of the engineering works that have been constructed, but also because it is the road that connects the capital with the first Port of the Country. The configuration of the country through which this railroad runs, presented very serious difficulties against its construction, but once that these were overcome, a line was located that offers to the traveller an opportunity of contemplating the most beautiful scenery of the country, and

a work of engineering skill well worthy of admiration. From whatever part of the Gulf or Pacific Coast a railroad is undertaken, an immense and difficult barrier is found, rendering the ascent to the elevated and extensive central tableland, one of the most difficult problems of engineering. From the Coast upwards, the country presents the most broken features, full of steep and elevated ridges with correspondingly deep vallies, which, although forming the most picturesque views, at the same time make the location of a railroad a work of the highest engineering science. Such a work is found in the Mexican Railroad, which in a few hours ascends from the sea beach to the heights of the Cordillera, ascending in that comparatively short distance, an altitude of 2,415 metres above the sea level.

The details of this important railroad, are as follows:

STATIONS.	DISTANCES. Partial.	Total.
Mexico, capital of the country, situated in the valley of the same name, in 19° 25′ 12″ N. Lat. and 99° 6′ 45″ Long. W. of Greenwich. It is the commercial and industrial centre of the Republic.		
Tepespan	32.500	32.500
San Juan Teotihuacan	11.250	43.750
Otumba	11.500	55.250
La Palma	6.000	61.250
Ometusco	6.250	67.500
Irolo	9.750	77.250
Apam	15.500	92.750
Soltepec	19.500	112.250
Guadalupe	11.750	124.000
Apizaco	15.250	139.250
Huamantla	25.500	164.750
San Marcos	17.250	182.000
Rinconada	18.000	200.000
San Andrés	20.500	220.500

STATIONS.	DISTANCES. Partial.	Total.
Esperanza	24.250	244.750
Maltrata	26.750	271.500
Nogales	12.250	283.750
Orizaba	8.000	291.750
Fortin	18.250	310.000
Cordoba	8.000	318.000
Atoyac	19.750	337.750
Paso del Macho	10.000	347.750
Camaron	12.750	360.500
Soledad	21.250	381.750
Purga	11.250	393.000
Tejería	15.250	408.250
Veracruz	15.500	423.750

PUEBLA BRANCH.

Standard Gauge. Steam traction.

Apizaco	,,	,,
Santa Cruz	10.750	10.750
Santa Ana	6.000	16.750
Panzacola	18.250	25.250
Puebla, capital of the State	12.000	47.000

PACHUCA BRANCH.

Standard Gauge. Steam traction.

Ometusco	,,	,,
Venta de Cruz	11.250	11.250
Zempoala	6.250	17.500
Sandoval	7.750	35.000
San José	11.000	36.250
Pachuca, capital of the State of Hidalgo	9.500	45.750

JALAPA BRANCH.

Standard Gauge. Mixed traction.

STATIONS.	DISTANCES. Partial.	Total.
Veracruz	„	„
Tejería	15.500	15.500
San Juan	11.000	26.500
Tierra Colorada	6.500	33.000
Paso de Ovejas	13.500	46.500
Puente Nacional	10.000	56.500
Rinconada	9.000	65.500
Plan del Rio	12.500	78.000
Cerro Gordo	11.000	89.000
Dos Rios	11.000	100.000
Jalapa, capital of the State of Veracruz	14.000	114.000

SANTA ANA TO TLAXCALA.

Broad Gauge. Animal traction.

Santa Ana, Station on Puebla Branch	„	„
San Pablo Apetatitlan	3.500	3.500
Tlaxcala, capital of the State	5.000	8.500

PUEBLA TO MATAMOROS.

Narrow Gauge. Steam traction.

Puebla to Los Arcos	7.919	7.919
Cholula	5.000	12.919
Santa María	8.900	21.819
San Agustin	18.100	39.919
Atlixco	5.850	45.769
San José Teruel	19.150	64.919
Tatetla	8.850	73.769
Izucar de Matamoros	10.543	84.312

MEXICAN SOUTHERN RAILROAD.

Narrow Gauge. Steam traction.

STATIONS.	DISTANCES. Partial.	Total.
Puebla to Amozoc	18.400	18.400
Santa Rosa	7.600	26.000
Tepeaca	11.200	37.200
Rosendo Márquez	17.400	54.600
Tecamachalco	10.500	65.100
Animas	12.600	77.700
Tlacotepec	9.400	87.100
Carnero	31.300	118.400
Tehuacan	8.900	127.300
Huerta	14.700	142.000
Santa Cruz	6.300	148.300
Pantzinco	10.900	159.200
Nopala	14.600	173.800
Venta Salada	6.400	180.200
San Antonio	15.200	195.400
Mexiá	8.700	204.100
Tecomavaca	20.300	224.400
Quiotepec	10.900	235.300
Cuicatlan	17.000	252.300
Tomillin	4.800	257.100
Oaxaca, capital of the State	9.900	267.000

PUEBLA INDUSTRIAL RAILROAD

Standard Gauge. Animal traction.

Puebla to Patriotismo Factory	5.800	5.800
Factory of Independencia y Economía	0.800	6.600
Factory of La Constancia	0.650	7.250
Cholula Branch starting from kilometre 4.		
Junction Bridge	4.000	4.000
Molino del Puente	0.500	4.500
Factory of Santa Cruz	1.500	6.000
Los Arcos	1.450	7.450

STATIONS.	DISTANCES. Partial	Total.
Factory of La Providencia.....	3.550	11.000
Cholula.....	1.500	12.500

SAN MARCOS AND NAUTLA RAILROAD.

Narrow Gauge. Steam traction.

San Marcos, Station on the Mexican R. R.....	„	„
Ojo de Agua.....	12.300	12.000
Vicencio.....	5.500	17.800
Dos Cerritos.....	6.100	23.900
Virreyes.....	6.700	30.000
Teoloyucan.....	4.700	35.300
Atenquique.....	4.700	40.700
Concepcion, Brach to Libres.....	8.000	48.000
Pochintoc.....	9.000	57.000
Huitzitzilapan.....	8.500	65.500

BRANCH TO SAN JUAN DE LOS LLANOS (VILLA DE LIBRES).

Concepcion to Villa de Libre.....	12.000	12.000

SAN ANDRES TO CHALHICOMULA.

Standard Gauge. Animal traction.....	10.353

ESPERANZA TO TEHUACAN.

Standard Gauge. Animal traction.

Esperanza, Station on the Mexican R. R.....	„	„
Cañada de Morelos.....	17.000	17.000
Carmen.....	18.000	35.000
Miahuatlan.....	4.500	39.500
Tehuacan.....	10.000	10.500

ORIZABA TO THE INGENIO.

Standard Gauge. Animal traction.

Garita de Orizaba to the village of the Ingenio...	7.550	7.550

CORDOBA TO TUXTEPEC.

Standard Gauge. Steam traction.

STATIONS.	DISTANCES. Partial.	Total.
Cordoba	,,	,,
Amatlan	4.300	4.300
Cuichapa	12.700	17.000
Ojos de Agua	14.450	31.450
Motzorongo	9.950	41.400
Kilometre 51	9.600	51.000

VERACRUZ TO ALVARADO.

Veracruz to Medellin. [Standard Gauge. Steam].	15.410	15.410
Port of Alvarado. [Narrow Gauge. Steam]	55.000	70.410

VERACRUZ TO BOCA DEL RIO.

Narrow Gauge. Steam traction	8.000	8.000

INTEROCEANIC RAILROAD.

First line.

MEXICO TO JOJUTLA.

Narrow Gauge. Steam traction.

Mexico	,,	,,
Reyes	17.495	17.495
Ayotla	7.005	24.500
Compañía	9.500	34.000
Tenango	12.750	46.750
Amecameca	10.500	57.250
Ozumba	12.250	69.500
Nepantla	23.000	92,500
Yecapixtla	26.800	119.300
Cuautla Morelos	16.700	136.000
Calderon	8.000	144.000
Yautepec	14.100	158.000

STATIONS.	DISTANCES. Parcial.	Total.
Ticuman	18.000	176.000
Tlaltizapan	9.000	185.000
Tlalquitenango	8.000	193.100
Jojutla	2.400	195.500

Second line.

MEXICO TO VERACRUZ.

Narrow Gauge.

Mexico	„	„
Los Reyes	17.495	17.495
San Vicente	9.353	26.848
Texcoco	11.452	38.300
Escudero	11.536	49.836
Metepec	11.334	61.170
Otumba	8.339	69.509
Soapayuca	4.724	74.233
Irolo	15.617	89.850
San Lorenzo	9.648	99.498
Calpulalpam	9.302	108.800
Mazapa	9.264	118.064
Nanacamilpa	14.011	132.075
Lagunilla	15.523	147.598
Atotonilco	8.736	156.334
San Martin	12.721	169.055
Analco	15.231	184.286
Los Arcos	15.586	199.872
Puebla	7.919	207.791
Amozoc	19.391	227.182
Acajete	11.344	238.526
La Venta	10.357	248.883
San Marcos	14.014	262.897
Ojo de Agua	11.303	274.200
Virreyes	17.064	291.264

STATIONS.	DISTANCES. Partial.	Total.
Tepeyahualco	17.041	308.305
Perote	29.467	337.772
Las Vigas	20.827	358.599
Cruz Verde	16.569	375.168
San Miguel	14.870	390.038
Banderilla	14.227	404.265
Jalapa	10.510	414.775
Veracruz	131.827	546.602
Branch to Libres.		
Virreyes	„	„
Villa de Libres	11.000	11.000
Branch to San Nicolás	24.000	14.000
Branch from Jalapa to Coatepec	4.000	4.000
Branch to Custom House	4.570	4.570
CHALCO TO AMECAMECA.		
Narrow Gauge. Animal traction.		
Chalco	„	„
Estacion de la Compañía	2.000	2.000
Factory of Miraflores	3.000	5.000
Tlalmanalco	7.000	12.000
San Juan	7.000	19.000
Zavaleta	1.000	20.000
Santo Tomas	2.000	22.000
San Antonio	2.000	24.000
Amecameca	2.680	26.680

YUCATAN RAILROADS.

MERIDA TO PROGRESO.

Standard Gauge. Steam traction.		
Merida	„	„
San Ignacio	22.000	22.000
Progreso	14.456	36.456

MERIDA TO PETO.

Narrow Gauge. Steam traction.

STATIONS.	DISTANCES. Partial.	Total.
Merida	„	„
Kanasin	8.000	8.000
Acanceh	17.000	25.000
Tecoh	8.000	33.000
Lepan	5.000	38.000
Xcanchakan	9.000	47.000
Hunabchen	11.000	58.000
Ticul	17.000	75.000
Oxcutzcab	15.000	90.000
Akil	9.000	99.000

MERIDA TO VALLADOLID.

Narrow Gauge. Steam traction.

Merida	„	„
Cholul	11.000	11.000
Conkal	4.000	15.000
Tixkokob	16.000	31.000
Motul	14.000	45.000
Cansahcab	22.000	67.000
Four kilometres more	71.000	71.000

PROGRESO BRANCH.

Narrow Gauge. Steam traction.

Conkal	„	„
Chicxulub	7.688	7.688
Progreso	23.000	30.688

MERIDA TO CAMPECHE.

Narrow Gauge. Steam traction.

Merida	„	„
Uman	16.000	16.000
Chochola	18.000	34.000

STATIONS.	DISTANCES. Partial.	Total.
San Bernardo	16.000	50.000
To Maxcanú	9.152	59.152
BRANCH TO HUNUCMA.		
Narrow Gauge.		
Uman to Hunucmá	11.000	11.000
HECELCHACAN TO CAMPECHE.		
Narrow Gauge.		
Calkiní	53.000	53.000
PROLONGATION FROM CAMPECHE TO LERMA.		
Narrow Gauge. Stram traction.		
	6.000	6.000
MERIDA TO IZAMAL.		
Narrow Gauge. Steam traction.		
Merida	„	„
Tixpehual	19.178	19.178
Tixkokob	5.300	24.478
Euan	5.522	30.000
Cacalchen	11.840	41.840
Tekantó	13,160	55.000
Izamal	11.848	66.848
TABASCO RAILROADS.		
Narrow Gauge. Animal traction.		
San Juan Bautista to Tamulté	5.750	5.750
Cárdenas to Rio Grijalva	7.500	7.500
Tonalá [Chiapas] to Tuxtla and Frontera (Tabasco). Standard Gauge. Steam traction	50,000	5.0000

RAILROAD FROM TECOLUTLA TO EL ESPINAL

Narrow Gauge.

STATIONS.	DISTANCES. Partial.	Total.
		9.000

TEHUANTEPEC NATIONAL RAILROAD.

Standard Gauge Steam traction.

Northern Section	98.000	98.000
Southern Section	76.000	76.000

HIDALGO RAILROAD.

Narrow Gauge. Steam traction

IROLO TO PACHUCA

Irolo, Station on the Mexican R. R	„	„
Tlanalapa	13.700	13.700
San Agustin	14.600	28.300
Tepa	6.000	34.300
Xochihuacan	8.700	43.000
Pachuca	17.300	60.300

TEPA TO TULANCINGO.

Tepa	„	„
Somoriel	20.100	20.100
Kilometre 38	17.900	38.000

TEOLOYUCAN TO SAN AGUSTIN.

Teoloyucan, Station on the Central and National Railroads	„	„
Zumpango	11.000	11.000
Tizayuca	15.000	26.000
Tezontepec	16.000	42.000
San Agustin, Station on the Irolo Branch	12.000	54.000

RAILROAD FROM TULA TO ZACUALTIPAN AND TAMPICO.

Standard Gauge. Steam traction.

STATIONS.	DISTANCES. Partial.	Total.
Tula to Pachuca.....	70.000	70.000
PACHUCA TO TAMPICO.		
Standard Gauge.		
Isolated Section.....	10.000	10.000

MEXICAN CENTRAL RAILROAD.

Broad Gauge. Steam traction.

This important means of communication between Mexico and the United States, was inaugurated in April 1884. Within the Mexican Republic, it traverses the Federal District, the States of Mexico, Hidalgo, Queretaro, Guanajuato, Jalisco, Aguascalientes, Zacatecas, Coahuila, Durango and Chihuahua and affords an outlet to such manufacturing cities as Queretaro, Celaya and Leon; to the Agricultural centres such as San Juan del Rio, the extensive territory called El Bajio, and Lagos; to rich mining districts such as Guanajuato, Zacatecas, Pachuca and Chihuahua; to the cotton country in the Valley of the Nazas and the Conchos; and to the commercial centres of Mexico, Guadalajara, Aguascalientes and San Luis Potosí.

The trunk line and branches forming part of this great system, measure 2,933 kilometres, 253 metres, as follows:

MEXICO TO PASO DEL NORTE.

STATIONS.	DISTANCES. Partial.	Total.
Mexico.....	„	„
Tlalnepantla.....	11.700	11.700
Barrientos.....	5.900	17.600
Lecheria.....	3.300	20.900
Cuautitlan.....	6.800	27.700

STATIONS.	DISTANCES. Partial.	Total.
Teoloyucan	8.300	36.000
Huehuetoca	10.500	46.500
Nochistongo	6.000	52.500
El Salto	9.900	62.400
Tula	17.600	80.000
San Antonio	13.500	93.500
Prieto	14.700	108.200
Leña	9.600	117.800
Marques	3.800	121.600
Nopala	8.300	129.900
Dañú	8.000	137.900
Polotitlan	14.000	151.900
Cazadero	9.200	161.100
Palmillas	10.900	172.000
San Juan del Rio	18.600	190.600
Chintepec	13.300	203.900
Ahorcado	12.200	216.100
Hércules	24.400	240.500
Querétaro	5.000	245.500
Mariscala	18.500	264.000
Apaseo	14.500	278.500
Celaya	13.000	291.500
Guaje	18.200	309.700
Sarabia	8.300	318.000
Salamanca	14.500	332.500
Chico	11.100	343.600
Irapuato	9.200	352.800
Villalobos	16.600	369.400
Silao	13.200	382.600
Trinidad	19.000	401.600
Leon	14.200	415.800
Francisco	16.400	432.200
Pedrito	15.400	447.600
Loma	13.700	461.300
Lagos	13.600	474.900
Serrano	17.600	492.500

STATIONS.	DISTANCES. Partial.	Total.
Los Salas	3.300	495.800
Santa Barbara	14.500	510.300
Santa María	10.200	520.500
Encarnacion	16.700	537.200
Peñuelas	26.400	563.600
Aguascalientes	21.500	585.100
Las Animas	22.900	608.000
Pabellon	7.200	615.200
Rincon de Romos	8.500	623.700
Soledad	20.500	644.200
Tlacotes	21.100	665.300
Trancoso	15.400	680.700
Guadalupe	15.300	696.000
Zacatecas	9.900	705.900
Pimienta	13.500	719.400
Calera	16.100	735.500
Ojuelos	13.700	749.200
Fresnillo	14.300	763.500
Mendoza	15.500	779.000
Gutiérrez	15.000	974.000
Cañitas	22.100	816.100
Cedro	13.500	829.600
La Colorada	20.700	850.300
Pacheco	25.800	876.100
Guzman	19.000	895.100
González	19.700	914.800
Camacho	21.400	936.200
San Isidro	21.900	958.100
Symon	23.200	981.300
La Mancha	24.000	1,005.300
Calvo	21.000	1,026.300
Peralta	23.900	1,050.200
Jimulco	15.500	1,065.700
Jalisco	14.400	1,080.100
Picardías	14.300	1,094.400
Matamoros	25,200	1,119.600

STATIONS.	DISTANCES. Partial.	Total.
Torreon	16.400	1,136.000
Lerdo	5.200	1,141.200
Noé	17.700	1,158.900
Mapimí	20.000	1,178.900
Peronal	24.000	1,202.900
Conejos	22.200	1,225.100
Yermo	23.700	1,247.800
Saez	18.900	1,266.700
Zavalza	18.500	1,285.200
Escalon	14.600	1,299.800
Rellano	18.000	1,317.800
Corralitos	21.400	1,339.200
Dolores	19.400	1,358.600
Jiménez	14.700	1,373.300
La Reforma	19.100	1,392.400
Diaz	18.800	1,411.200
Bustamante	19.200	1,430.400
Santa Rosalía	15.700	1,446.100
La Cruz	16.000	1,462.100
Concho	20.400	1,482.500
Saucillo	15.600	1,498.100
Las Delicias	16.100	1,514.200
Ortiz	7.300	1,521.500
Bachimba	24.300	1,545.800
Horcasitas	17.400	1,563.200
Mapula	22.400	1,585.600
Chihuahua	22.900	1,608.500
Sacramento	23.100	1,631,600
Terrazas	15.100	1,646.700
Sauz	11.600	1,658.300
Encinillas	19.900	1,678.200
Agua Nueva	13.900	1,692.100
Laguna	13.400	1,705.500
Puerto	20.400	1,725.900
Gallego	20.200	1,746.100
Chivatito	29.000	1,775.100

STATIONS.	DISTANCES. Partial	Total.
Las Minas	13.100	1,803.600
Ojo Caliente	13.500	1,817.100
Cármen	11.300	1,828.400
San José	22.800	1,851.200
Ranchería	24.100	1,875.300
Los Médanos	28.700	1,904.000
Samalayuca	18.200	1,922.200
Tierra Blanca	16.100	1,938.300
Mesa	14.400	1,952.700
Paso del Norte [Ciudad Juárez]	17.600	1,970.300
GUANAJUATO BRANCH.		
Silao	„	„
Marfil	18.373	18.373
Guanajuato	5.000	23.373
AGUASCALIENTES TO TAMPICO		
Aguascalientes	„	„
Chicalote	14.300	14.300
Cañada	6.200	20.500
Gallardo	10.500	31.000
El Tule	4.600	35.600
San Gil	15.200	50.800
San Márcos	8.200	59.000
García	11.000	70.000
La Honda	12.800	82.800
Peñon Blanco	11.000	93.800
Salinas	16.100	109.900
Espíritu Santo	27.200	137.100
Tolosa	15.800	152.900
Solana	9.500	162.400
Arenal	16.200	178.600
Ahualulco	10.900	189.500
Estanzuela	21.900	211.400
San Luis Potosí	13.300	224.700
La Tinaja	30.800	255.500
Corcovada	13.600	269.100

STATIONS.	DISTANCES. Partial.	Total.
Peotillos	15.300	284.400
Silos	7.300	291.700
Villar	8.600	300.300
La Joya	8.700	309.000
San Lázaro	4.800	313.800
Cerritos	13.400	327.200
San Bartolo	29.600	356.800
Las Tablas	18.400	375.200
Cárdenas	39.000	414.200
La Labor	13.500	427.700
Las Canoas	9.000	436.700
Tamosopo	25.500	462.200
Tacamba	8.800	471.000
Rascon	9.000	480.000
Crucitas	15.000	495.000
El Salto	9.500	504.500
Valles	24.500	529.000
Taninul	18.300	547.300
Las Palmas	7.800	555.100
Chijol	68.500	623.600
Tamós	31.500	655.100
Tampico	13.100	668.200
IRAPUATO TO GUADALAJARA.		
Irapuato	„	„
San Miguel	5.100	5.100
Rivera	11.300	16.400
Cuitzeo	7.600	24.000
San Rafael	14.200	38.200
Pénjamo	11.600	49.800
Villaseñor	14.300	64.100
Palo Verde	7.100	71.200
Cortés	13.500	84.700
La Piedad	6.600	91.300
Patti	20.100	111.400
Yurécuaro	14.300	125.700

STATIORS.	DISTANCES. Partial.	Total.
Negrete	11.000	146.700
La Barca	6.400	153.100
Feliciano	4.700	157.800
Limon	8.300	166.100
Ocotlan	13.200	179.300
Poncitlan	17.500	196.800
Atequiza	21.600	218.400
La Capilla	8.300	226.700
El Castillo	7.600	234.300
Guadalajara	24.800	259.100

SAN BLAS TO GUADALAJARA.

Guadalajara to San Blas	26.700	26.700

SONORA RAILROAD.

Broad Gauge. Steam traction.

This road unites the Port of Guaymas with the Frontier Custom House of Nogales, in the State of Sonora, and is connected with the Central Railroad and the Southern Pacific, by way of Benson, Arizona.

STATIONS.	DISTANCES. Partial.	Total.
Guaymas	,,	,,
Batuecas	3.000	3.000
Lord Bridge	3.600	6.600
Batamotal	5.500	12.100
Maytorena	11.900	24.000
Santa Rosa	8.200	32.200
Ortiz	15.400	47.600
Moreno	24.600	72.200
Torres	30.600	102.800
Willard	32.500	126.300
Hermosillo	18.100	144.400
Zamora	21.500	165.900
Pesqueira	13.300	179.200
Carbó	34.300	213.500

STATIONS.	DISTANCES. Partial.	Total.
Posa	19.900	233.400
Querobabi	22.700	256.100
Puerto	12.800	268.900
Llano	25.000	293.900
Santa Ana	23.100	317.000
Magdalena	18.300	335.300
San Ignacio	7.100	342.400
Pierson	3.800	346.200
Imuris	7.900	354.100
Casita	24.600	378.700
Cicuta	9.800	388.500
Agua Zarca	14.400	402.900
Encina	9.100	412.000
Nogales	10.302	422.302

MEXICAN NATIONAL RAILROAD.

Narrow Gauge. Steam traction.

This road which has no less importance than the Central, unites the capital of the Republic with the State capitals of Mexico, Michoacan, San Luis Potosí, Coahuila and Nuevo Leon, besides many other towns in those same States and in that of Guanajuato. It traverses through mountains full of the most beautiful scenery, and rich in fertile land such as the Valley of Toluca; it carries the traveler to some of the most picturesque spots of the Republic, like Lake Pátzcuaro, and gives the shortest means of communication between the Republic of Mexico, and that of the United States.

The lines operated by the Company which owns this important system, are as follows:

STATIONS.	DISTANCES. Partial.	Total.
Tacuba switch	0.300	4.900
Naucalpan switch	3.700	8.600
Naucalpan	0.800	9.400
Rio Hondo	3.900	13.300

STATIONS.	DISTANCES. Partial.	Total.
San Bartolito	8.700	22.000
Tanque Obraje	3.800	25.800
Dos Rios	1.700	27.500
Tanque Laurel	4.200	31.700
Laurel	1.300	33.000
Cumbre	5.900	38.900
Salazar	2.500	41.400
Carretera de Toluca	3.200	44.600
Fresno	3.400	48.000
Jajalpa	2.500	50.500
Ocoyoacac	5.600	56.100
Lerma	3.000	59.100
Toluca	13.900	73.000
Palmillas	7.400	80.400
Del Rio	16.700	97.100
Ixtlahuaca	14.700	111.800
Tepetitlan	12.300	124.100
Flor de María	9.800	133.900
Bassoco	20.200	154.100
Venta del Aire	4.000	158.100
Tultenango	5.800	163.900
Solís	11.200	175.100
Tepetongo	10.900	186.000
Buenavista	7.100	193.100
Mayor	7.800	200.900
Pateo	4.800	205.700
Pomoca	3.400	209.100
Maravatío	14.100	223.200
San Antonio	12.000	235.200
Zirizícuaro	8.700	243.900
Tarandacuao	12.000	255.900
San José	8.400	264.300
Providencia	8.500	272.800
Acámbaro	12.900	285.700
Silva	2.200	287.900
Betti	3.100	291.000

STATIONS.	DISTANCES. Partial.	Total.
San Cristobal	7.200	298.200
Salvatierra	17.500	315.700
Cascalote	15.500	331.200
Ojo Seco	8.900	340.100
Celaya	14.200	354.300
Santa Rita	5.200	359.500
San Juan	7.400	366.900
Soria	3.800	370.700
Chamacuero	7.200	377.900
Rinconcillo	8.900	386.800
Begoña	13.000	399.800
San Miguel Allende	9.100	408.900
Atotonilco	11.600	420.500
Tequisquiapan	11.300	431.800
Erre	6.200	438.000
Dolores Hidalgo	6.600	444.600
Rincon	7.200	451.800
Peña Prieta	11.300	463.100
Trancas	9.100	472.200
Obregon	9.000	481.200
San Felipe	18.700	499.900
Chirimoya	14.400	514.300
Jaral	13.200	527.500
Villa de Reyes	16.700	544.200
Jesus María	10.000	554.200
La Pila	14.800	569.000
San Luis Potosí	15.000	584.000
Peñasco	13.400	597.400
Puito	15.100	612.500
Bocas	12.500	625.000
Enramada	13.600	638.600
Moctezuma	15.200	653.800
Venado	18.900	672.700
Los Charcos	17.000	689.700
Laguna Seca	16.300	706.000
Berrendo	11.600	717.600

STATIONS.	DISTANCES. Partial.	Total.
La Maroma	15.400	733.000
Wadley	16.000	749.000
Catorce	8.600	757.600
Poblazon	6.800	764.400
Vanegas	15.200	779.600
La Parida	16.400	796.000
San Vicente	15.800	811.800
El Salado	15.700	827.500
Lulu	15.700	843.200
La Ventura	20.200	863.400
Santa Elena	20.000	883.400
Gómez Farías	20.900	904.300
Oro	13.200	917.500
Carneros	17.300	934.800
Agua Nueva	9.600	944.400
Encantada	13.200	957.600
Buena Vista	6.300	963.900
Saltillo	9.700	973.600
Los Bosques	11.500	985.100
Ramos Arizpe	3.500	988.600
Santa María	7.300	995.900
Ojo Caliente	9.700	1,005.600
Los Muertos	7.000	1,012.600
La Mariposa	3.300	1,015.900
Rinconada	9.400	1,025.300
Los Fierros	7.700	1,033.000
Soledad	5.500	1,038.500
García	10.200	1,048.700
Durazno	10.000	1,058.700
Santa Catarina	11.100	1,069.800
Leona	2.600	1,072.400
San Jerónimo	4.900	1,077.300
Gonzalitos	2.900	1,080.200
Monterrey	2.500	1,082.700
Ramon Treviño	7.600	1,090.300
Topo	6.100	1,096.400

STATIONS.	DISTANCES. Partial.	Total.
Salinas	20.900	1,117.300
Morales	8.100	1,125.400
Palmito	10.600	1,136.000
Stevenson	5.700	1,141.700
Palo Blanco	8.700	1,150.400
Alamo	13.200	1,163.600
Villaldama	12.600	1,176.200
Guadalupe	2.100	1,178.300
Bustamante	3.400	1,181.700
Huisache	9.800	1,191.500
Golondrinas	11.400	1.202.900
Salomé Botello	12.000	1,214.900
Brasil	12.100	1,227.000
Lampazos	8.900	1,235.900
Mojina	23.300	1,259.200
Rodríguez	21.200	1,280.400
Camaron	12.400	1,292.800
Huisachito	11.500	1,304.300
Jarita	16.500	1,320.800
Sánchez	13.100	1,333.900
Laredo de Tamaulipas	16.100	1,350.000
Puente Internacional	1.050	1,351.050

PATZCUARO BRANCH.

Acámbaro	„	„
Tanque	12.300	12.300
La Cumbre	0.950	13.250
Andocutin	17.610	30.860
Huingo	6.170	37.030
Queréndaro	12.360	49.390
Zincinco	4.000	53.390
Quirio	10.000	63.390
Charo	7.610	71.000
La Goleta	5.920	76.920

STATIONS.	DISTANCES. Partial.	Total.
Atapaneo	3.150	80.070
Morelia	11.200	91.270
Tacuaro	19.900	111.170
Coapa	9.610	120.780
Lagunillas	6.800	127.580
Ponce	10.380	137.960
Chapultepec	2.910	140.870
Pázcuaro	12.530	153.400

LINE FROM MATAMOROS TO MONTERREY.

Matamoros	„	„
Rosita	10,000	10.000
Escondido	4.000	14.000
Capote	12.000	26.000
Ensenada	12.000	38.000
La Mesa	11.000	49.000
Ebano	15.000	64.000
Corrales	14.000	78.000
Reynosa	7.000	85.000
Anzalduas	9.000	94.000
Reynosa Viejo	15.000	109.000
Las Prietas	5.000	114.000
San Miguel de las Cuevas	6.000	120.000

LINE TO EL SALTO.

Mexico	„	„
Tacuba switch	4.600	4.600
Atzcapotzalco	2.100	6.700
Tlalnepantla	6.600	13.300
Barrientos	5.600	18.900
Tepetate	0.700	19.600
Pimentel	1.500	21.100
Lechería	1.000	22.100

STATIONS.	DISTANCES. Partial.	Total.
Cuautitlan	7.600	29.700
Teoloyucan	7.700	37.400
Huehuetoca	10.400	47.800
Crucero	1.300	49.100
El Salto	18.200	67.300
Prolongation from El Salto	4.000	71.300

OTHER LINES.

Circunvalation of the city of Mexico	5.100	5.100
Tramway of the Colonia, animal traction	3.540	3.540
Naucalpan to Contreras	4.450	4.450

LINES DE LA COMPAÑIA CONSTRUCTORA NACIONAL MEXICANA.

Standard Gauge. Animal traction.

COLIMA TO MANZANILLO.

Colima	„	„
Coquimatlan	13.000	13.000
Huaracha	18.000	31.000
Armería	18.000	49.000
Cuyutlan	14.000	63.000
Manzanillo	31.500	94.500

ZACATECAS TO OJO CALIENTE.

Zacatecas	„	„
Florida	4.000	4.000
Guadalupe	3.000	7.000
Santa Mónica	10.000	17.000
Troncoso	7.000	24.000
Palmillas	12.000	36.000
Refugio	3.000	39.000
Delgado	4.000	43.000
Ojo Caliente	4.500	47.500

MEXICAN INTERNATIONAL RAILROAD.

Broad Gauge. Steam traction.

The system operated by this Company includes the following lines: From Piedras Negras, Coahuila, on the margin of the Rio Bravo, to Torreon on the Rio Nazas, in the State of Durango; from Torreon to the City of Durango; from Sabinas to Hondo, and from Hornos to San Pedro, in the State of Coahuila.

PIEDRAS NEGRAS TO TORREON.

STATIONS.	DISTANCES. Partial.	Total.
Piedras Negras or Ciudad Porfirio Diaz.....	,,	,,
Fuente.....	6.540	6.540
Rosas.....	7.060	13.600
Nava.....	26.200	39.800
Allende.....	11.960	51.760
Leona.....	14.940	66.700
Peyotes.....	15.640	82.340
Blanco.....	21.430	103.770
Sabinas.....	12.850	116.620
Soledad.....	15.850	132.470
Baroteran.....	10.650	143.120
Aura.....	14.120	157.240
Obayos.....	15.290	172.530
Baluarte.....	15.130	187.660
Hermanas.....	10.690	198.350
Adjuntas.....	21.230	219.580
Estancia.....	13.570	233.150
Monclova.....	4.770	237.920
Castaño.....	18.560	256.480
Gloria.....	14.920	271.400
Baján.....	19.590	290.990
Joya.....	12.410	303.410
Espinazo.....	20.410	323.820
Reata.....	12.080	335.900

STATIONS.	DISTANCES. Partial.	Total.
Venadito	22.860	358.760
Sauceda	27.040	385.800
Jaral	24.760	410.560
Pastora	22.020	432.580
Cármen	21.610	454.190
Paila	23.970	478.160
Mimbre	19.670	497.830
Rafael	16.540	514.370
Pozo	12.970	527.340
Bola	12.290	539.630
Mayran	12.480	552.110
Hornos	10.870	562.980
Colonia	13.410	576.390
Matamoros	17.620	594.010
Torreon	22.540	616.550
SABINAS BRANCH.		
Sabinas	„	„
Felipe	17.430	17.430
Hondo	2.380	19.810
BRANCH TO SAN PEDRO,		
Hornos to San Pedro	23.600	23.600
TORREON TO DURANGO.		
Torreon	„	„
San Carlos	8.050	8.050
Loma	15.740	23.790
Chocolate	19.280	43.070
Guaracha	20.870	63.940
Pedriceña	15.200	79.140
Pasaje	25.640	104.780
Yerbaniz	24.540	129.320
Noria	21.580	150.900
Catalina	12.760	163.660
Tapona	12.150	175.810

STATIONS.	DISTANCES. Partial.	Total.
San Gabriel	22.040	197.850
Chorro	16.930	214.780
Labor	25.670	240.450
Durango, capital of the State	12.510	252.960
Branch from Pedricena to Velardeña	9.370	9.370

SINALOA TO DURANGO.

Standard gauge, Steam traction.

Altata, Port of Entry	„	„
Guasimillas	15.000	15.000
Bachimeto	10.000	25.000
Limoncito	2.000	27.000
Navolato	4.000	31.000
Yevavito	8.000	39.000
San Pedro	7.000	46.000
Aguaruto	4.000	50.000
Bachihualato	4.000	54.000
Flores	3.000	57.000
Culiacan, capital of the State of Sinaloa	4.927	61.927

TOLUCA TO SAN JUAN DE LAS HUERTAS.

Narrow Gauge. Steam traction.

Toluca, capital of the State of Mexico	„	„
Zinacantepec	8.600	8.600
Huerta, hacienda	4.000	12.600
This road has constructed 3,221 kilometres more making á total of		15.821

VANEGAS TO THE CEDRAL.

Narrow Gauge. Steam traction.

Vanegas to the Cedral	47.000	47.000
Branch to Potrero	18.000	18.000

MARQUÉS TO ZIMAPÁN.

Narrow Gauge. Steam traction.

STATIONS.	DISTANCES. Partial.	Total.
Marqués, Station on the Mexican Central R. R.	„	„
Astillero	23.206	23.206

CHIHUAHUA RAILROADS.

Standard Gauge. Steam traction.

LINES CONSTRUCTED.

Chihuahua to the Sierra Madre	6.000	6.000
Jiménez to Balleza	5.000	5.000

MONTEREY AND MEXICAN GULF RAILROAD.

Standard Gauge. Steam traction.

TREVIÑO TO MONTEREY.

Treviño [El Venadito on the International R. R.]	„	„
Norias	10.000	10.000
Amargos	13.000	23.000
Paredon	8.000	31.000
Icamole	24.000	55.000
Tanque	9.000	64.000
García	10.000	74.000
Pesquería	11.000	85.000
Surg	10.000	95.000
Monterey, capital of the State of Nuevo Leon	11.000	106.000

MONTERREY TO TAMPICO.

Monterey	„	„
San Miguel	13.000	13.000
Juárez	11.600	24.600

STATIONS.	DISTANCES. Partial	Total.
City of Cadereyta	11.400	36.000
San Juan	18.000	54.000
Vaqueros	20.000	74.000
Terán	9.000	83.000
Montemorelos	13.500	96.500
José María Parás	12.200	108.700
Huerta	12.800	121.500
Loma Alta	11.200	132.700
City of Linares	14.300	147.000
Benítez	19.000	166.000
Summit Seding	14.500	180.500
Santa Rosalía	11.500	192.000
Villagran	5.500	197.500
Carrizos	11.500	209.000
Tinajas	20.000	229.000
La Cruz	12.600	241.600
Santa Engracia	11.000	252.600
Martínez	4.000	256.600
Caballeros	14.400	271.000
Ciudad Victoria, capital of the State of Tamaulipas	13.000	284.000
To Tampico by way of Llera, Xicotencal and Altamira	234.640	518.640

MINERAL RAILROAD.

Standard Gauge. Steam traction.

Escalon, Station on the mine Central R. R.	„	„
La Gloria	41.000	41.000
Carrillo	6.000	47.000
Guimbalete	23.000	70.000
Sierra Mojada	55.000	125.000

MARAVATIO TO IGUALA.

Standard Gauge. Steam traction.

STATIONS.	DISTANCES. Partial.	Total.
Maravatío	,,	,,
Chamuco	3.430	3.430
La Huerta	6.790	10.220
Senguio	6.151	16.371
Irimbo	7.885	24.256
Aporo	6.979	31.235
Guerrero	9.765	41.000
Junction to Angangueo	3.876	44.876
Do. to Trojes	4.333	49.209
Ocampo	0.908	50.117
Branch to Angangueo	3.828	3.828
Branch to Trojes	1.076	1.076

MEXICAN NORTHEASTERN RAILROAD.

Narrow Gauge. Steam traction.

Mexico	,,	,,
Santa Ana	34,700	34.700
Tizayuca	15,356	50.056
Branch to Cerro Gordo	0.422	0.422
Do. to Tulpetlac	0.936	0.936
Do. to Custom House	0.286	0.286

SANTIAGO VALLEY RAILROAD.

Narrow Gauge. Animal traction.

Salamanca to Jaral by way of Valle de Santiago.	35.000	35.000

TLALNEPANTLA TO ATIZAPAN.

Narrow Gauge. Steam traction.

STATIONS.	DISTANCES. Partial.	Total.
Tlalnepantla to Pedreg.al.....	10.000	10.000

MEXICO VALLEY RAILROAD.

Narrow Gauge.

City lines, animal traction.....	7.702	7.702
Suburban lines, connecting Mexico City with La Piedad, Tacubaya, Mixcoac and San Angel, Steam traction.....	14.298	22.000

RAILROAD FROM THE PORFIRIO DIAZ GATE TOWARDS THE ARTEAGA GATE.

Narrow Gauge. Animal traction.

Part constructed.....	2.000	2.000

RAILROAD FROM THE TOWN OF MIXCALCO TO THE RANCH OF SANTA CRUZ.

Narrow Gauge. Animal traction.

Part constructed.....	4.450	4.450

CITY CIRCUMVALATION RAILROAD.

Constructed.....	1.000	0.000

FEDERAL DISTRICT RAILROAD.

Country lines. Including double track. Standard gauge...	106.420
Do. do. Narrow gauge.....	11.917
	118.337

of which 13.396 kilometres are operated by steam traction and have a broad gauge.

These lines connect the capital with Chapultepec, Tacubaya, Mixcoac, La Castañeda, San Angel, Churubusco, Coyoacan, Tlalpam, San Fernando, La Piedad, Tacuba, Atzcapotzalco, Tlalnepantla, Guadalupe and the Baths of El Peñon.

IXTACALCO TO MEXICALCINGO.

Narrow Gauge. Animal traction.

STATIONS.	DISTANCES. Partial.	Total.
Venegas to Santa Anita	2.422	2.422
Ixtacalco	1.280	3.702
Mexicalcingo and Ixtapalapa	2.998	6.700

TOTAL LENGTH OF RAILROADS IN THE REPUBLIC, 1892.

Mexicano R. R.—Mexico to Veracruz.	kiloms.	423.750
Puebla Branch	,,	47.000
Ometusco to Pachuca	,,	45.750
Vcracruz to Jalapa less 15.500 common to main line	,,	98.500
Santa Ana to Tlaxcala	,,	8.500
Puebla to Matamoros	,,	84.312
Puebla to Oaxaca	,,	367.000
Industrial of Puebla	,,	7.250
Puebla to Cholula	,,	12.500
San Marcos to Nautla	,,	65.500
Branch to San Juan de los Llanos	,,	12.000
San Andres to Chalchicomula	,,	10.353
Esperanza to Tehuacan	,,	50.000
Orizaba to the Ingenio	,,	7.550
Córdoba to Tuxtepec	,,	51.000
Veracruz to Alvarado	,,	70.410
Veracruz to Boca del Río	,,	8.000
Interoceanic R. R. Mexico to Jojutla	,,	195.500
Carried forward	,,	1,564.875

Brought forward.....	kiloms.	1,564.875
Mexico to Veracruz, deducting 17.491 kilometres from Mexico to Reyes, common to other lines.....	„	529,107
Jalapa to Coatepec.....	„	4.000
Branch to Villa de Libres.....	„	11.000
„ to San Nicolás.....	„	24.000
„ Custom House.....	„	4.570
Chalco to Ameca.....	„	26.680
Yucatan Railroads.		
Mérida to Progreso.....	„	36.456
Mérida to Peto.....	„	99.000
Mérida to Valladolid	„	71.000
Branch to Progreso.....	„	30.688
Mérida to Maxcanú	„	59.152
Branch to Hunucmá	„	11.000
Campeche to Hecelchacan.....	„	53.000
Prolongation to Lerma.....	„	6.000
Mérida to Izamal.....	„	66.848
San Juan B. á Tamulté Railroad.....	„	5.750
Cárdenas to Rio Grijalva.....	„	7.500
Tonalá to Tuxtla and frontera de Tabasco	„	50.000
Tecolutla to Espinal.....	„	9.000
Tehuantepec National Railroad.		
North Section.....	„	98.000
South Section.....	„	76.000
Hidalgo Railroad.		
Irolo to Pachuca.....	„	60.300
Tepa to Tulancingo.....	„	38.000
Teoloyucan to San Agustin.....	„	54.000
Tula and Pachuca Railroad.....		70.000
Pachuca to Tampico, isolated section..	„	10.000
Carried forward.....	kiloms.	3,075.926

Brought forward.....	kiloms.	3,075.926
Mexicano Central Railroad.		
Mexico to Paso del Norte.....	„	1,970.300
Guanajuato Branch.....	„	23.373
Aguascalientes to Tampico.....	„	668.200
Irapuato to Guadalajara.....	„	259.100
San Blas to Guaristemba.....	„	26.700
Sonora, Guaymas and Nogales R. R...	„	422.302
Mexican National Railroad.		
Mexico to Laredo.....	„	1,351.050
Acámbaro to Pátzcuaro.....	„	153.400
Matamoros to San Miguel.....	„	120.000
Mexico to El Salto and prolongation...	„	71.300
Naucalpan to Contreras.....	„	4.450
Circumvalation of the Capital.....	„	5.100
Tramways to Colonia.....	„	3.540
Mexican National Construction Co.		
Colima to Manzanillo.....	„	94.500
Zacatecas to Ojocaliente.....	„	47.500
Mexican International R. R.		
Piedras Negras to Torreon.....	„	616.550
Branch to Sabinas.....	„	19.810
Do. from Hornos to San Pedro.....	„	23.600
Torreon to Durango.....	„	252.960
Branch from Pedriceña to Vilardeña..	„	9.370
Sinaloa and Durango Railroad.		
Altata to Culiacan.....	„	61.927
Railroad from Toluca to San Juan de las Huertas.....	„	15.821
Vanegas to Cedral.....	„	47.000
Branch to Potrero.....	„	18.000
Railroad from Marqués to Zimapan....	„	23.206
Chihuahua to la Sierra Madre.....	„	6.000
Jiménez to Balleza.....	„	5.000
Carried forward.....	kiloms.	9,395.985

Brought forward.....	kiloms.	9,395.985
Monterey and Mexican Gulf R. R.		
Treviño to Monterey	„	106.000
Monterey to Tampico.....	„	518.640
Escalon and Sierra Mojada Mineral Railroad.....	„	125.000
Railroad from Maravatío to Iguala.....	„	50.117
Branch to Angangueo.....	„	3.828
„ „ Trojes.....	„	1.076
Mexico Northeastern R. R.		
Mexico to Tizayuca.....	„	50.056
Branch to Cerrogordo	„	0.422
Do. to Tulpetlac.....	„	0.936
Branch to Custom House.....	„	0.286
Santiago Valley Railroad.....	„	35.000
Railroad from Tlalnepantla to Atizapan	„	10.000
México Valley Railroad	„	22.000
Railroad from Porfirio Diaz to Arteaga.	„	2.000
Do. from Mixcalco to Santa Cruz..	„	4.450
Federal District R. R.....	„	211.132
Ixtacalco to Mexicalcingo	„	20.058
Metropolitano de cintura.....	„	1.000
	Kiloms.	10,557.986

THE RAILROADS ESTABLISHED IN THE REPUBLIC ARE DIVIDED AS FOLLOWS.

Country lines.

Standard Gauge, kilometres	6,338.971	
Narrow Gauge, kilometres.....	4,219.015	10,557.986
City lines.		
Aguascalientes, standard.....	4.000	
„ narrow.....	5.000	9.000
Campeche, narrow.....	2.000	
El Cármen, narrow.....	1.000	3.000
Carried forward.....		12.000

Brought forward.....		12.000
Colima, standard.....	1.500	1.500
Chihuahua, standard.....	3.269	3.269
Dnrango, narrow.....	5.800	
Villa Lerdo, narrow.....	4.000	9.984
Guanajuato, standard.....	4.250	
Leon, standard.....	7.900	
Irapuato, standard.....	2.000	
Celaya, narrow.....	2.000	16.150
Hidalgo, Pachuca, narrow.....	6.000	6.000
Jalisco, Guadalajara, narrow.....	11.270	
La Barca, narrow.....	4.750	
Ocotlan, narrow.....	1.300	
Juanacatlan, narrow.....	7.000	24.320
Mexico, Toluca, narrow.....	3.500	
Cuautitlan, standard.....	1.000	4.500
Michoacan, Morelia, narrow.....	4.600	
Zamora, narrow.....	4.100	8.700
Nuevo Leon, Monterey, narrow	35.188	35.188
Oaxaca, Oaxaca, narrow.....	3.000	3.000
Puebla, Puebla, standard.....	19.071	19.071
Querétaro, Querétaro, standard.....	9.100	
San Juan del Rio, standard.....	2.940	12.040
San Luis Potosí, San Luis, standard.....	24.000	24.000
Sinaloa, Mazatlan, Narrow.....	4.042	4.042
Tabasco, San Juan Bautista, narrow.....	2.500	2.500
Tamaulipas, Ciudad Victoria, narrow.....	2.400	
Laredo, narrow.....	1.500	
Carried forward.....		186.264

Brought forward.....		186.264
Matamoros, narrow.....	5.825	
Tampico, narrow.....	0.283	10.008
Veracruz, Veracruz, standard.....	10.200	
Orizaba, standard.....	11.800	
Córdoba, standard.....	4.500	
Tuxpan, standard.....	1.600	28.100
Yucatan, Merida, standard.....	25.372	
Progreso, narrow.....	3.113	28.485
Zacatecas, Zacatecas, narrow.....	5.933	5.933
Distrito Federal, Mexico, standard.....	64.390	
Mexico, narrow.....	29.920	94.310
Tepic, San Blas, standard.....	1.000	1.000
		354.100
Suburban lines.		
Campeche, Campeche to Lerma, narrow.....	7.000	
Ibanchac to Yohaltun, narrow.....	40.000	47.000
Colima, Colima to Villa Alvarez, standard...	6.000	6.000
Jalisco, Guadalajara to San Pedro, narrow ..	6.000	
Guadalajara to Fabrica Atemajac, narrow...	5.950	11.950
Nuevo Leon, Monterey to Topo, narrow.....	9.000	9.000
San Luis–Vanegas to Potrero, standard.....	47.000	47.000
Tlaxcala, Tlaxco to Soltepec, narrow.....	16.760	
Zacatelco to Panzacola, narrow.....	3.086	19.846
Yucatan, Merida to Hobonya, narrow.....	22.000	
Progreso to Chicxulub, narrow.....	10.500	
Hoctun to Cacatchen, narrow.....	12.000	44.500
		185.296

Private lines.

Baja California, Santa Rosalia to Boleo, narrow	32.000	
Baja California to Progreso, narrow	15.000	47.000
Nuevo Leon–Guadalupe to Minas Viejas, narrow	24.000	24.000
		71.000

Private moveable lines.—Decauville system 0.50^{m} *gauge.*

Yucatan, hacienda of Toxan		8.000
,, ,,	Yaxché	8.000
,, ,,	Chel	8.000
,, ,,	Hancanab	4.000
,, ,,	Teɔiɔ	6.000
,, ,,	Tamchen	6.000
,, ,,	Nohuayun	4.000
,, ,,	ɔibikak	6.000
,, ,,	Mulɔay	6.000
,, ,,	Hotzuc	6.000
,, ,,	Ioincab	6.000
,, ,,	Xtppen	6.000
,, ,,	Cansap	4.000
,, ,,	Hobonyá	4.000
,, ,,	Ulilá	4.000
,, ,,	Tixcacal	4.000
,, ,,	Xcucul	4.000
,, ,,	Tebec	4.000
,, ,,	Tanil	4.000
,, ,,	Poxilá	4.000
,, ,,	San Antonio	1.000
,, ,,	Cunchucmil	10.000
,, ,,	Chactun	4.000
,, ,,	Chocholá	2.000
,, ,,	Santo Domingo	1.000
	Carried forward	124.000

		Brought forward.....	124.000	
Yucatan,	hacienda of	Santa Rosa.....	1.000	
„	„	Santa Ana.....	1.000	
„	„	San Bernardo.....	3.000	
„	„	Acú.....	3.000	
„	„	Sihó.....	1.000	
„	„	Calcehtok.....	14.000	
„	„	Kojobchacab.....	1.000	
„	„	Kanachen	2.000	
„	„	Chablé	2.000	
„	„	Cholul.....	1.000	
„	„	Oncán.....	3.000	
„	„	Too.....	8.000	
„	„	San Antonio.....	4.000	
„	„	Canicab.....	19.000	
„	„	San Juan	5.000	
„	„	Chacmultún.....	3.000	
„	„	Xcuyum.....	4.000	
„	Rancho	Thul.....	4.000	
„	„	Kakalná.....	2.000	
„	between	the Ranchos Colorada y Pacebxac	3.000	
„	Rancho	Emal de Gonzalez.....	3.000	
„	Hacienda	Yaxché.....	3.000	
„	„	Sac-nicté.....	6.000	
„	„	Chuiché.....	2,000	
„	„	Ebulá.....	3.000	
„	„	Kanan.....	4.000	229.000
Guerrero,	Chilapa.....		1.252	1.252
				230.252

SUMMARY.

Railroads by Federal Concession	10,557.986
City lines.....	354.100
Suburban lines.....	185.296
Private lines	71.000
Decauville lines	230.252
TOTAL.....	11,398.634

MOVEMENT OF PASSENGERS AND FREIGHT ON RAILROADS 1890.

Railroads.	Passengers.	FREIGHT. Tons.	Kil.	Product.
Mexican	502.139	443.794	979	4,266.999
Merida to Progreso	162.701	53.949	818	144.706
Federal District	14,457.203	.....	.....	1,276.739
Hidalgo	113.605	137.467	201	434.522
Veracruz to Alvarado	72.292	11.500	892	76.958
Merida to Peto	126.978	30.024	477	103.904
Acapulco to Veracruz	657.616	288.836	358	1,537.106
Puebla to Matamoros	69.811	8.161	436	65.640
Sinaloa and Durango	42.987	4.722	749	33.783
Mexican Central	736.730	694.966	914	6,699.348
Mexican National	937.527	487.598	563	3,561.987
Sonora	48.196	46.147	870	357.022
Merida to Valladolid	295.034	50.781	662	160.096
Tlalmanalco	55.345	24.988	131	18.673
Merida to Campeche	75.496	6.779	458	47.996
Mexican International	59.357	222.856	211	1,044.202
Mexican Southern. Not specified	.....	.....	.....	1.770
San Juan Bautista to Carrizal	110.731	1.022	000	7.756
Chalchicomula	13.010	4.385	480	9.388
Orizaba to Ingenio	106.773	500.504	000	12.782
Santa Ana to Tlaxcala	145.263	.....	.....	10.167
Cardenas to Rio Grijalva, not specified	.....	.....	.....	1.219
Toluca to las Huertas	178.072	18,595	861	28.421
Potrero, Vanegas and Rio Verde	10.848	1.840	661	21.255
Tehuacan to Esperanza.	20.462	16.625	870	94.204
Merida to Izamal	106.833	10.146	374	84.457
Monterey & Mex. Gulf	57.096	168.204	600	861.583
Mexico to Ixtapalapan	298.126	.....	.....	32.042
Cordoba to Tuxtepec	49.142	.....	.....	11.297

Tehuacan to Esperanza.....	1890	20,462	18,459	96	16,625	870	75,744	87	94,204	83
	1891	17,426	11,087	06	14,381	340	68,684	08	79,771	14
Mérida to Izamal.....	1890	106,883	54,462	10	10,146	374	29,995	33	84,457	43
	1891	80,042	41,891	51	13,775	771	44,798	43	86,689	94
Mexican Southern	1891	76,788	74,259	78	11,506	820	59,427	26	133,687	04
Tonalá to Tuxtla and Frontera.	1890	.....	1,296	97	.....	.....	473	80	1,770	77
	1891	.....	6,092	42	.....	.....	4,737	42	10,829	84
Monterey and Mexican Gulf...	1890	57,096	70,185	08	168,204	600	791,398	47	861,583	55
	1891	94,052	112,910	64	174,829	706	876,563	75	989,474	39
Ixtacalco, Mexicaltzingo and Ixtapalapa.....	1890	298,126	23,288	28	.....	.....	8,803	78	32,042	06
Córdoba to Tuxtepec.....	1890	49,192	8,917	06	.....	.....	2,379	97	11,297	03
	1891	23,542	14,009	84	.....	.....	5,097	98	19,107	82
Maravatío to Iguala.....	1890	3,466	3,389	66	.....	.....	3,372	10	6,761	76
Salamanca to Jaral.....	1890	18,836	5,946	04	529	080	1,217	04	7,168	08
México Valley.....	1891	1.422,373	99,422	05	7,752	000	6,105	38	105,527	43
Mineral.....	1891	4,870	14,802	61	94,726	000	740,122	98	754,925	59

1 The returns of the line from Puebla to Matamoros, for the year 1891, are included in those of the Interoceanic from Acapulco to Veracruz.

XIII

TELEGRAPHS.

These important public works were introduced into the Mexican Republic in the year 1850. In that year, Don Juan de la Granja made the first experiment in that line by placing the National Palace in Mexico in communication with the School of Mines. From that time extensive lines began to be established all through the Republic, the first being one that united the City of Mexico with that of Puebla, and the first message was transmitted in the month of December, 1851. Concessions were afterwards granted accompanied by subsidies for different lines extending over the whole country, and the original kilometre of line stretched in the year 1850, is now converted into a net work of 65,910 kilometres, belonging to the different telegraph Lines of the present day.

The above includes the following lines:

1st. The Federal lines.

2nd. The lines which have been temporarily ceded by the National to the State Governments.

3rd. Private lines belonging to the States.

4th. Lines belonging to Telegraph Companies.

5th. Railroad Telegraph lines.

6th. Telephone lines.

1. Federal Telegraph Lines.

The Federal Telegraphs have a length of 35,053 kilometres which are divided into 20 zones in the following manner.

	Offices.		Kilometres.
1st. Zone.....	21	.....	5,489
2. „	16	.....	2,342
3. „	13	.....	1,508
4. „	20	.....	1,994
5. „	14	.....	1,186
6. „	20	.....	1,605
7. „	8	.....	599
8. „	11	.....	1,035
9. „	9	.....	830
10. „	24	.....	3,205
11. „	11	.....	1,433
12. „	15	.....	2,271
13. „	11	.....	972
14. „	14	.....	2,468
15. „	17	.....	1,873
16. „	9	.....	838
17. „	16	.....	2,342
18. „	10	.....	1,659
19. „	13	.....	805
20. „	10	.....	599
	282		35,053

The Federal Telegraphs place the following towns in communication.

TOWNS.	CLASS.	STATES.	Population.
Acámbaro.....	Town.....	Guanajuato.....	6,000
Acaponeta.....	„	Tepic.....	5,150
Acapulco.....	City & Port.....	Guerrero.....	5,000
Acatlan.....	City.....	Puebla.....	8,000
Acayucan	Town.....	Veracruz.....	2,670
Agiabampo.....	„	Sonora.....	
Agualulco ó Ahualulco.....	„	San Luis Potosí...	1,200
Aguascalientes.....	State Capital.....	Aguascalientes.....	32,000
Aguililla.....	Village.....	Michoacan.....	80
Aguada.....	Port.....	Campeche.....	

TOWNS.	CLASS.	STATES.	Population.
Alamos	Mining City	Sonora	5,800
Alcozauca	Village	Guerrero	
Aldama ó Presas	Town	Tamaulipas	
Altamira	„	Tamaulipas	2,000
Altata	Village & Port	Sinaloa	780
Allende S. Miguel	City	Guanajuato	22,000
Allende	Town	Chihuahua	
Amatan	Village	Chiapas	824
Apam	„	Hidalgo	2,000
Apizaco	„	Tlaxcala	2,123
Arroyozarco	Farm	México	1,275
Arenal	Village	Veracruz	300
Atlixco	City	Puebla	8,000
Atlixtac	Village	Guerrero	430
Atotonilco el Grande	„	Hidalgo	2,178
Avino	Mineral village	Durango	1,250
Badirahuato	Village	Sinaloa	800
Bagdad	Town & Port	Tamaulipas	2,000
Balleza	Town	Chihuahua	2,000
Barca	City	Jalisco	8,300
Bolonchen	Town	Campeche	2,500
Buenavista San Cárlos	Village	Sonora	
Cadereyta Jiménez	City	Nuevo Leon	4,319
Camargo	Town	Tamaulipas	6,000
CAMPECHE	Capital City & Port,	Campeche	19,000
Cárdenas	Town	Tabasco	1,600
Cárdenas	Farm	San Luis Potosí	
Cármen	City & Port	Campeche	3,847
Celaya	City	Guanajuato	25,000
Cerralvo	Town	Nuevo Leon	2,740
Cerritos	City	San Luis Potosí	1,800
Cerro Gordo	Town	Durango	803
Ciudad del Maíz	City	San Luis Potosí	4,000
Ciudad Guerrero	Frontier Custom House	Tamaulipas	

TOWNS.	CLASS.	STATES.	Population.
Ciudad Victoria....	State Capital.....	Tamaulipas.....	10,000
Coahuayana.....	Village.....	Michoacan.....	569
Coalcoman.....	Mining Village...	Michoacan.....	3,000
Coatzacoalcos.....	Village & Port...	Veracruz.....	867
Cocorit.....	Village.....	Sonora.....	
Colima.....	State Capital.....	Colima.....	26,300
Comitan.....	City.....	Chiapas	6,800
Concepcion Guerrero.....	City.....	Chihuahua	
Concordia.....	,, ...	Sinaloa.....	3,000
Córdoba.....	,, ...	Veracruz.....	5,000
Cosamaloapan	Town.....	Veracruz.....	5,000
Cosihuiriachic.....	Mining village...	Chihuahua.....	8,000
Coyame.....	Village.....	Chihuahua	
Cuencamé.....	Mining Town....	Durango.....	
Cuernavaca.....	State Capital.....	Morelos	8,200
Cuicatlan.....	Village.....	Oaxaca.....	1,252
Culiacan.....	State Capital.....	Sinaloa.....	9,000
Cunduacan.....	Town.....	Tabasco.....	1,642
Chalco.....	Village.....	México.....	2,460
Champoton.....	Town.....	Campeche.....	2,000
Charcas.....	Mineral Town...	San Luis Potosí...	2,000
Chavarría.....	Village	Durango.....	
Chihuahua.....	State Capital.....	Chihuahua	25,000
Chilapa.....	City.....	Guerrero.....	12,000
Chilpancingo.....	State Capital.....	Guerrero.....	6,000
Chinipos.....	Mineral Town...	Chihuahua	
Dibalchen.....	Village.....	Campeche.	7,000
Dolores Hidalgo.....	City.....	Guanajuato.....	7,200
Dos Arroyos.....	Village.....	Guerrero.....	40
Dos Caminos.....	,, ...	Guerrero.....	453
Durango.....	State Capital.....	Durango	25,000
Elota.....	Village.....	Sinaloa.....	1,252
Encarnacion.....	Town.....	Jalisco.....	5,400
Esperanza.....	Farm & Station..	Puebla.....	1,149
Fresnillo.....	Mining City.....	Zacatecas.....	13,000

TOWNS.	CLASS.	STATES.	Population.
Frontera	Port Town	Tabasco	1,500
Fuerte	Sinaloa	Sinaloa	3,876
GUADALAJARA	State Capital	Jalisco	105,000
Guadalupe y Calvo	Mining Town	Chihuahua	
GUANAJUATO	State Capital, Mining Town	Guanajuato	75,000
Guaymas	Port Town	Sonora	3,000
Gutiérrez Zamora	Village	Veracruz	1,202
Hecelchacan	Town	Campeche	5,945
HERMOSILLO	State Capital	Sonora	9,000
Hidalgo	Town	Tamaulipas	3,907
Hidalgo del Parral	City	Chihuahua	
Hopelchen	Town	Campeche	1,692
Huajuapam	„	Oaxaca	3,590
Huatusco	City	Veracruz	8,144
Huautla	Village	Oaxaca	4,190
Huejutla	Town	Hidalgo	4,000
Huimanguillo	„	Tabasco	2,380
Huistla	Village	Chiapas	600
Huitzo	„	Oaxaca	2,149
Iguala	City	Guerrero	7,000
Irapuato	„	Guanajuato	15,000
Iturbide	Village	Campeche	655
Ixcuintla	„	Chiapas	
Ixtlan	Town	Tepic	824
JALAPA	State Capital	Veracruz	13,000
Jalapa de Diaz	Village	Oaxaca	1,045
Jalostotitlan	„	Jalisco	5,500
Jaltipan	„	Veracruz	3,832
Jamiltepec	Town	Oaxaca	2,905
Jaral	Farm	Coahuila	200
Jaumave	Town	Tamaulipas	5,000
Jicalango	Village	Tabasco	
Jiménez	Town	Chihuahua	
Juxtlahuaca	Village	Oaxaca	1,743
Juchitan	Town	Oaxaca	8,423

TOWNS.	CLASS.	STATES.	Population
Lagos	City	Jalisco	14.000
Lampazos	,,	Nuevo Leon	5,090
Laredo de Tamaulipas	Town	Tamaulipas	
Leon	City	Guanajuato	50,000
Libres	Town	Puebla	5,000
Linares	City	Nuevo Leon	8,300
Magdalena	Town	Sonora	1,000
Manzanillo	Port town	Colima	1,248
Mapastepec	Village	Chiapas	822
Mapimí	Mining town	Durango	2,500
Maravatío	Town	Michoacan	4,050
Matamoros	City & Port	Tamaulipas	21,000
Matamoros [Izucar]	City	Puebla	12,000
Matamoros de la Laguna	Town	Coahuila	4,000
Maxcanú	,,	Yucatan	4,000
Mazatlan	City & Port	Sinaloa	16,000
Médano	Village	Sonora	
México	National Capital.	Distrito Federal	350,000
Mérida	State Capital	Yucatan	40,000
Mezcala	Village	Guerrero	
Mier	Town	Tamaulipas	4,000
Minatitlan	,,	Veracruz	3,717
Mocorito	,,	Sinaloa	
Moctezuma	,,	San Luis Potosí	1,800
Monclova	City	Coahuila	3,500
Montemorelos	,,	Nuevo Leon	3,341
Monterey	State Capital	Nuevo Leon	42,000
Morelia	State Capital	Michoacan	24,000
Múzquiz Santa Rosa	Town	Coahuila	3,353
Niltepec	Village	Oaxaca	1,507
Nochixtlan	,,	Oaxaca	2,410
Nogales	,,	Sonora	
Nombre de Dios	City	Durango	5,000
Nopalapan	Farm	Veracruz	534

TOWNS.	CLASS.	STATES.	Population.
Nopalucan.....	Town.....	Puebla.....	5,470
Oaxaca.....	State Capital.....	Oaxaca.....	29,000
Ojo Caliente.....	City.....	Zacatecas.....	
Orizaba.....	,, ...	Veracruz.....	20,000
Ortiz.....	R. R. Station.....	Sonora.....	
Otumba.....	City.....	México.....	1,792
Ozuluama.....	Town.....	Veracruz.....	3,000
Pachuca.....	State Capital & Mineral.....	Hidalgo.....	25,000
Pánuco.....	Mining town.....	Sinaloa.....	1,964
Papantla.....	Town.....	Veracruz.....	
Parras.....	City.....	Coahuila.....	6,500
Paso del Macho.....	Village.....	Veracruz.....	
Paso del Norte.....	City.....	Chihuahua.....	
Patos.....	Town.....	Coahuila.....	2,000
Pénjamo.....	,, ...	Guanajuato.....	7,600
Peñoles.....	,, ...	Durango.....	
Perote.....	Village.....	Veracruz.....	1,000
Piedad.....	City.....	Michoacan.....	11,000
Piedras Negras [Porfirio Diaz].....	Town.....	Coahuila.....	2,500
Pijijiapa.....	Village.....	Chiapas.....	1,286
Pinos Altos..	Mining town.....	Chihuahua.....	
Potan.....	Village.....	Sonora.....	
Presidio del Norte..	Town.....	Chihuahua.....	
Progreso.....	City.....	Yucatan.....	4,093
Puebla.....	State Capital.....	Puebla.....	90,000
Puente de Ixtla.....	Town.....	Morelos.....	1,030
Purépero.....	,, ...	Michoacan.....	5,900
Quelite.....	Village.....	Sinaloa.....	1,865
Querétaro.....	State Capital.....	Querétaro.....	25,000
Quilá.....	Village.....	Sinaloa.....	1,682
Quiriego.....	,, ...	Sonora.....	
Reynosa.....	Town.....	Tamaulipas.....	
Rinconada.....	Farm.....	Veracruz.....	
Rio Florido.....	Town.....	Chihuahua.....	

TOWNS.	CLASS.	STATES.	Population.
Rosario	Mining City	Sinaloa	4,200
Sabancuy	Village	Campeche	200
Sain Alto	City	Zacatecas	
Salado	Farm	San Luis Potosí	
Salamanca	Town	Guanajuato	10,000
Salina Cruz	Port	Oaxaca	
Salinas	City	San Luis Potosí	3,120
Salinas Victoria	Town	Nuevo Leon	2,598
SALTILLO	State Capital	Coahuila	26,000
Salto	Factory	Durango	202
Salvatierra	City	Guanajuato	14,000
S. Andrés Chachilcomula	,,	Puebla	10,000
San Andrés Tuxtla	Town	Veracruz	7,600
San Benito	Port	Chiapas	
San Blas	,,	Tepic	2,200
San Carlos Llave	Village	Veracruz	1,000
SAN CRISTOBAL	State Capital	Chiapas	12,000
S. Diego de la Union	Town	Guanajuato	4,210
San Felipe del Progreso	,,	México	798
San José	Farm	Chihuahua	
San José Acateno	Town	Puebla	2,041
San José de Iturbide	,,	Guanajuato	5,200
San Juan	Village	Veracruz	
SAN JUAN BAUTISTA	State Capital	Tabasco	8,300
San Juan de los Lagos	Town	Jalisco	
San Juan del Rio	City	Querétaro	10,000
San Luis de la Paz	Town	Guanajuato	7,600
SAN LUIS POTOSÍ	State Capital	San Luis Potosí	62,600
San Martin Texmelucan	City	Puebla	
San Nicolás	,,	Veracruz	
San Pablo Meoqui	Town	Chihuahua	
San Pedro	Farm	Campeche	

TOWNS.	CLASS.	STATES.	Population.
San Pedro de la Colonia	Town	Coahuila	5,000
Santa Ana Acatlan.	Village	Jalisco	
Santa María del Rio	City	San Luis Potosí	8,000
Santander Jiménez.	Town	Tamaulipas	
Santa Teresa	Farm	Tamaulipas	
Santa Rosalía	Town	Chihuahua	
Santiago Ixcuintla	,,	Tepic	5,150
San Vicente	Farm	Chiapas	
Sayula	City	Jalisco	11,000
Sihuatanejo	Port	Guerrero	40
Silacayoapan	Town	Oaxaca	2,945
Silao	City	Guanajuato	16,000
Simojovel	Town	Chiapas	2,300
Sinaloa	City	Sinaloa	3,500
Sombrerete	Mining town	Zacatecas	
Soto la Marina	Port town	Tamaulipas	1,500
Symon	Farm & Station	Durango	
Tacotalpa	Town	Tabasco	630
Tamiahua	Port town	Veracruz	1,622
Tampico	,,	Tamaulipas	6,800
Tancochapa	Farm	Veracruz	109
Tantima	Village	Veracruz	2,000
Tantoyuca	Town	Veracruz	2,600
Tapanatepec	Village	Oaxaca	1,366
Tapachula	City	Chiapas	5,000
Teapa	,,	Tabasco	3,000
Tecamachalco	,,	Puebla	4,500
Tecolutla	Port town	Veracruz	300
Tecomavaca	Village	Oaxaca	398
Tecpan	City	Guerrero	3,000
Tehuacan	,,	Puebla	5,200
Tehuantepec	,,	Oaxaca	9,600
Teotitlan	Town	Oaxaca	1,629
Tepatitlan	City	Jalisco	5,200
Tepeaca	,,	Puebla	

TOWNS.	CLASS.	STATES.	Population.
Tepeji del Rio.....	Village.....	Hidalgo.....	602
Tepic.....	Capital of Terr...	Tepic.....	13,000
Teposcolula.....	Village.....	Oaxaca.....	1,830
Tequila.....	City.....	Jalisco.....	
Tequisixtlan.....	Village.....	Oaxaca.....	1,016
Teziutlan.....	City.....	Puebla.....	7,500
Tianguistengo.....	Village.....	Hidalgo.....	878
Tlacolula.....	Town.....	Oaxaca.....	3,969
Tlacotalpan.....	City.....	Veracruz.....	10,000
Tlalpam.....	City.....	Distrito Federal...	4,000
Tlapa.....	Town.....	Guerrero.....	
Tlapacoyan.....	Village.....	Veracruz.....	4,000
Tlaxcala.....	State Capital.....	Tlaxcala.....	6,700
Tlaxiaco.....	Town.....	Oaxaca.....	7,400
Toluca.....	State Capital.....	México.....	12,000
Tonalá.....	Port town.....	Chiapas.....	
Tonila.....	Village.....	Jalisco.....	1,500
Topia.....	Mining town.....	Durango.....	2,000
Tototlan.....	Village.....	Jalisco.....	
Torin.....	„	Sonora.....	
Torreon.....	Farm & Station..	Coahuila.....	160
Tula.....	Town.....	Hidalgo.....	1.300
Tula.....	City.....	Tamaulipas.....	14,000
Túxpan.....	Port town.....	Veracruz.....	7,700
Tuxtepec.....	Town.....	Oaxaca.....	2,277
Tuxtla Gutiérrez...	City.....	Chiapas.....	5,000
Ures.....	„	Sonora.....	6,000
Uruachic.....	Mining town.....	Chihuahua.....	
Valle de Santiago...	City.....	Guanajuato.....	7,800
Valles.....	„	San Luis Potosí...	400
Ventura.....	Farm.....	Coahuila.....	
Veracruz.....	City Port.....	Veracruz.....	24,000
Villa de Reyes.....	Town.....	San Luis Potosí...	6,000
Villa de San Felipe.	„	Guanajuato.....	6,700
Villaldama.....	„	Nuevo Leon.....	3,088
Villa Lerdo.....	„	Durango.....	

TOWNS.	CLASS.	STATES.	Population.
Villagran	Town	Tamaulipas	
Yatipan	Farm	Hidalgo	151
Yautepec	Village	Oaxaca	700
Yedras	Mining town	Sinaloa	1,000
Zacatecas	State Capital & mines	Zacatecas	33,000
Zacoalco	Village	Jalisco	
Zamora	City	Michoacan	11,000
Zapotlan [C. Guzman]	„	Jalisco	24,000
Zapotlanejo	Village	Jalisco	
Zarca	Farm	Durango	

2. Federal Telegraph lines temporarily ceded to the States and offices thereto pertaining.

STATES.	OFFICES.	LENGTH.
Aguascalientes	4	61.151
Coahuila	2	132. 000
Durango	6	325. 850
Guanajuato	5	123. 056
Guerrero	12	484. 740
Jalisco	3	88. 996
Mexico	6	119. 250
Michoacan	23	888. 451
Morelos	10	194. 666
Oaxaca	6	199. 460
Puebla	14	407. 840
Querétaro	2	270. 260
San Luis Potosí	10	175. 745
Sinaloa	4	116. 630
Tamaulipas	3	353. 000
Veracruz	4	88. 500
Yucatan	14	500. 012
Lower California	2	41. 900
		4,571.507

3. State Telegraphs.

STATES.	SECTIONS.	Offices.	Length.	Total length
Chiapas.....	Pichucalco to Teapa [Tabasco]	2		29k 500
Chihuahua.....	.....	...		225 000
Hidalgo.....	Pachuca to Jacala.....	7	266k 361	
,, ...	Pachuca to Tenango.....	7	169 100	
,, ...	Pachuca to Huejutla.....	9	284 639	
,, ...	Tulancingo to Apam.....	2	58 660	728 760
Jalisco.....	Guadalajara to los Reyes.....	10	318 000	
,, ...	Guadalajara to Ixtlahuacan.....	1	86 000	
,, ...	Cocula to Autlan.....	4	164 000	
,, ...	Mascota to Bramador.....	2	92 000	
,, ...	Ameca to Etzatlan.....	2	86 000	
,, ...	Tecolotlan á Arandas.....	3	87 000	733 000
México.....	Toluca to Villa de Bravo.....	3	92 080	
,, ...	Temascaltepec to Sultepec.....	2	87 710	
,, ...	Toluca to Tlalnepantla & Texcoco.....	3	127 327	257 117
Oaxaca.....	Oaxaca to Pochutla.....	7		246 400
San Luis Potosí.....	Matehuala to Cedral.....	2		20 000
Sinaloa.....	.....	...		78 000
Sonora.....	Álamos to Agiabampo.....	...	104 750	
,, ...	Ures to Arizpe.....	...	118 172	222 922
Zacatecas.....	.....	21		1,063 936
	Total.....			3,604k 635

4. Telegraph Company lines.

LINES.	OFFICES.	LENGTH.
Comercial line from México to Veracruz.....	22	1,040k740
Huamantla to Puebla.....	2	60 000
Zacoalco to Atoyac.....	4	50 000
Ensenada to Tijuana.....	2	152 000
Ensenada to Alamos.....	2	128 000
Ensenada to San Quintin.....	2	254 000
Carried forward.....		1,684.740

LINES.	OFFICES.	LENGTH.
Brought forward.....		1,684k740
Córdoba to Fortín.....	2	37 000
Huatusco to Fortin.....	3	47 000
Veracruz to Minatitlan.....	9	402 000
Cable Company.		
Tampico to Galveston.....	...	791 783
Tampico to Veracruz.....	...	395 891
Veracruz to Coatzacoalcos.....	...	207 601
Salina Cruz to La Libertad.....	...	698 442
Land Lines.		
México to Veracruz.....	...	429 687
Coatzacoalcos to Salina Cruz.....	...	402 328
Total.....		5,096k472

5. Railroad Telegraphs.

	Length.
Mexican.....	1,008k500
Veracruz to Alvarado.....	70 410
Interoceanic.....	768 177
Sinaloa & Durango.....	62 000
Mexican Central.....	2,932 500
Mexican National.....	1,704 240
Mexican Nat. Cons. Cº.....	142 000
Sonora.....	425 740
Mexican International.....	837 500
Potrero to Cedral, Vanegas and Rio Verde.....	65 000
Puebla to Oaxaca and Tehuantepec.....	264 116
Monterey & Gulf.....	624 650
National Tehuantepec.....	183 380
Ometusco to Pachuca.....	47 710
Tula to Zacualtipan & Tampico.....	70 000
Mineral.....	125 000
Total.....	9,330k923

SUMMARY.

	Lengt.
Federal Telegraph Lines	35,053'540
„ „ „ temporarily ceded to the States.	4,571 507
State	3,604 635
Telegraph Company Lines	5,096 472
Railroad Telegraphs	9,330 923
Total	57,657'071

TELEPHONES.

CITY TELEPHONES.	Instruments.	Length in kilometres
México	67	99.317
Pachuca	17	8.740
Toluca	8	3.280
Querétaro	3	1.600
	95	112.937
COUNTRY TELEPHONES.		
Federal District	34	240.921
State of Durango		113. 80
„ México	91	1,192.788
„ Michoacan	9	167.600
„ Morelos	25	248.011
„ Querétaro	4	41.000
„ Tlaxcala	9	185.104
	172	2,208.504
PRIVATE CITY TELEPHONES.		
State of Colima	25	16.000
„ México	2	740
„ Morelos	7	1.602
Carried forward	34	18.342

Brought forward.....	34	18.342
„ Nuevo Leon.....	267	366.074
„ Querétaro.....	„	36.000
„ San Luis Potosí.....	33	29.150
„ Yucatan.....	96	36.250
	430	485.816

PRIVATE COUNTRY TELEPHONES.

State of Campeche.....	2	7.000
„ Colima.....	2	4.000
„ Nuevo Leon.....	4	33,000
„ Yucatan.....	5	108.000
Territory of Tepic.....	2	24.000
Federal District.....	2	80.000
	17	256.000

MEXICAN TELEPHONE COMPANY.

CITY AND COUNTRY LINES.	Instruments.	Lenght.
Mexico and towns in the Federal District.....	914	1,251ᵏ000
Guadalajara.....	130	162 000
Puebla.....	62	195 000
Oaxaca.....	34	50 000
Veracruz.....	50	97 000
Progreso and Mérida.....	77	197 000
Guanajuato.....	34	56 000
Zacatecas.....	51	54 000
San Luis Potosí.....	31	40 000
Leon.....	20	25 000
Querétaro.....	22	20 000
Saltillo.....	51	65 000
Monterey.....	273	121 000
Total.....	1,749	2,333ᵏ000

RAILROAD TELEPHONES.

	Length.
Mexican	25'000
Mérida to Progreso	36 500
Federal District	35 955
Hidalgo	151 000
Mérida to Peto	104 000
Puebla to Matamoros	76 393
Central Mexican	3 450
National Mexican	1 610
Mérida to Valladolid	101 688
Tlalmanalco to Chalco	26 650
Mérida to Campeche via Calkiní	123 150
Campeche to Lerma	6 000
Nautla to San Marcos	76 000
San Juan Bautista to Tamulté	5 750
San Andrés Chalchicomula	10 353
Orizaba to Ingenio	7 550
Santa Ana to Tlaxcala	8 500
Cárdenas to Rio Grijalva	7 500
Toluca to San Juan de las Huertas	15 721
Tehuacan to Esperanza	50 000
Mérida to Izamal	65 850
Chihuahua & Hidalgo to Sierra Madre	11 000
Tonalá to Tuxtla & Frontera	50 000
Marqués to Zimapan	25 847
Tecolutla to Espinal	9 000
Córdoba to Tuxtepec	51 000
Pachuca to Tampico	10 000
Maravatío to Iguala	50 000
Northeastern of México	50 000
Salamanca to Jaral	35 000
Tlalnepantla to Atizapan	10 000
Veracruz to Boca del Rio	8 000
Puebla Industrial	15 000
Vanegas to Potrero	47 000
Hacienda de Guadalupe to Minas Viejas	24 000
Total	1,334'467

COUNTRY TELEPHONES FOR PRIVATE USE.

	Instruments.	Length.
State of Aguascalientes	4	5k333
„ Colima	2	4 000
„ Hidalgo	11	44 000
„ México	12	112 770
„ Morelos	32	59 463
„ Nuevo Leon	4	27 000
„ Querétaro	8	61 000
„ Sonora	14	68 773
„ Yucatan	94	953 000
Territory of Tepic	10	228 000
	191	1,563k341

SUMMARY.

	Instruments.	Length.
City Telephones in the States	95	112k937
Country Telephones in the States	172	2,208 504
Private Telephones in the Cities	430	485 816
Private Telephones in the Country	17	256 000
Mexican Telephone Company	1,749	2,333 000
Railroad Telephones	.....	1,334 467
Private Telephones in the Country for private use	191	1,521 821
		8,263 341
Total Telegraph Lines		57,657k071
Total Telephone Lines		8,263 341
		65,920k412

XIII

POST-OFFICE.

This important Branch of the Public Administration has made great progress since the country has become pacified, the old and antiquated customs have been eliminated and the best modern practices have been introduced under the present Administration.

Aecording to the data furnished by the General Administration of the post-office, the post-offices existing during the financial year of 1891 to 1892, amounted to 1,410 in the following order:

Local Post-offices	464
Agencies	930
City Branches	46
	1,410

During the same period the following improvements have been carried out: establishment of 23 mail routes, one city branch and twenty seven agencies. Elevation of five offices of the latter class to the rank of Local Post-offices.

The Post-offices of the Federal District are those which have the largest circulation, but at the same time a very large increase has been noted in the country correspondence.

The movement of correspondence during the same financial year was as follows:

RECEIVED.

Home service.

Public correspondence.....	17.595,090	
Official correspondence.....	1.358,634	18.953,724
Printed matter, 2nd. & 3rd. class.....		36.280,472
Samples 4th. class.....		169,801
Public registered correspondence.....	336,478	
Official „ „	139,368	475,846
Total home service.....		55.879,845

Foreign service.

Public correspondence.....	4.865,907	
Official.....	30,768	4.896,678
Printed matter, 2nd. & 3rd. class.....		7.836,471
Samples, 4th. class.....		95,758
Public registered correspondence.....		171,711
Total foreign service.....		13.000,615
Total inward correspondence...		68.880,460

FORWARDED.

Home service.

Public correspondence.....	24.087,967	
Official correspondence.....	2.097,273	26.185,240
Printed matter.....		34.467,252
Samples		143,931
Public registered correspondence.....	407,063	
Official „ „	153,731	560,974
Total Home service.....		61.357,217

Foreign service.

Public correspondence	3.366,261	
Official correspondence	63,727	3.429,988
Printed matter		3.668,401
Samples		43,314
Registered correspondence		107,052
Total foreign service		7.248,795
Total outward correspondence.		68.606,012

GENERAL MOVEMENT.

Pieces received during the year	68.880,460
Pieces forwarded during the year	68.606,012
	137.486,472

The movement of postal cards in the Capital during the same year was as follows:

Received from the Interior and from abroad..	23,312
Forwarded	26,350
Total movement	49,662

The receipts and expenses during the same year, as shown in the accounts of the Fourth Section of the General Administration of the Post-office will be found in the following table:

REVENUES.

Sale of stamps	1.095,290	89
Revenues of the financial year 1889 to 1890	119	32
Revenues of the financial year 1890 to 1891	6,571	07
Stamped envelopes	340	90
Post Office Boxes	25,241	00
Sundries	57	01
Fines	483	07
Exchange	14,078	57
Carried forward	1.142,181	40

EXPEDITURE.

General Administration.....		78,380 89
Railroad and steamer service.....		47,514 57
Expenses of administration.....		608,133 01
Local Post Offices. Salaries and Expenses.....		476,374 59
	$ 1.142,181 83	$ 1.210,403 06

POSTAL TARIFFS.

Home service.

First class.—Letters up to 15 grammes.....	$ 0 10
And 10 cents for every additional 15 grammes or fraction thereof up to 2 kilograms, which is the maximum weight received.	
Letter cards, each.....	0 10
Postal cards, each.....	0 05
Postal card with answer prepaid.....	0 10
Second class.—Periodical publications, for each 480 grammes or fraction thereof.....	0 04
The prospectuses or first numbers of these publications are carried gratis.	
Third class.—Books, circulars, publications not periodical, business papers, original matter for printing, printers proofs and printed matter not included in the second class, up to 60 grammes.....	0 01
For every 60 grammes above the first, or fraction of 60 grammes up to 2 kilograms, which is the largest weight received.....	0 01
Fourth class.—Samples without any value and objects not included in the previous classes, and which by their volume can be transported in the mails, for every 30 grammes or fraction thereof.....	0 02
Official communications from the States, for every 15 grammes or fraction thereof, up to 2 kilograms.....	0 03

City service.

First class.—Letters, for every 15 grammes or fraction thereof up to 2 kilograms	0 04
Letter cards, each	0 04
Postal cards, each	0 02
Postal card with answer paid	0 04

The postage on the articles specified in the Second, Third and Fourth classes as well as the correspondence of the State Governments is the same as that given in the tariff for the Home Service.

The cost of registry both for the city and country services, is 25 cents payable in postage stamps.

The post-office only receives articles whose dimensions do not exceed 20 centimetres in length, 10 in width and 5 in thickness, and whose weight does not exceed 2 kilograms; but nevertheless, exceptions are made to this general rule when the parcels so received do not prejudice the postal service or the contents of the mail bags.

FOREIGN SERVICE.

FIRST TARIFF.

For correspondence to Canada by land route and to other countries of the Postal Union, except the United States, by subsidized steamer.

Letters, for every 15 grammes or fraction thereof	0 05
Postal cards, for every 50 grammes or fraction thereof	0 01
Business papers, up to 250 grammes	0 05

With an additional cent for any excess of 50 grammes of fraction thereof.

Samples, up to 100 grammes	0 02
.. .. to 150 grammes	0 03
.. .. to 150 to 200 grammes	0 04

Samples, up to 200 to 250 grammes	0 05
This being the highest weight allowed.	

SECOND TARIFF.

For correspondence forwarded by steamers without subsidy.

Letters, for every 15 grammes or fraction thereof	0 10
Postal cards, each	0 03
„ „ with answer paid	0 06
Printed matter, for every 50 grammes or fraction thereof	0 02
Books, circulars, business papers, publications not being periodicals, printer's proofs, for every 60 grammes or fraction thereof	0 01
Samples and other articles not included in the above quotations, up to 100 grammes	0 02
With an additional cent for every 50 grammes or fraction thereof.	
Postal packages with merchandise, for every 460 grammes or fraction thereof	0 12
Up to 5 kilogrammes, which is the highest weight allowed.	

SPECIAL TARIFF POR THE UNITED STATES.

Letters, for every 15 grammes or fraction thereof	0 05
Postal cards, each	0 02
„ „ with answer prepaid	0 04
Periodical publications, for every 480 grammes or fraction thereof	0 04
Books, circulars, business papers, etc	0 01
Mercantile samples and other objects not included in the previous classifications, up to 100 grammes	0 02
For any excess of 50 grammes or fraction thereof	0 01
Postal Packages with merchandise, up to 460 grammes	0 12
With an additional 12 cents for any excess of 460 grammes or fraction thereof.	
Prepayment is required on all printed matter, business papers, samples and postal packages, and on letters, for at least the value of one unit.	

Tariff for the countries not included in the Postal Union.

Postal card or letter card	0 20
Letters up to 15 grammes in weight	0 20
Periodical publications up to 480 grammes	0 08
Books, circculars, etc., for every 30 grammes	0 02
Articles not included in the previous clasifications, for every 30 grammes	0 04

SUBSIDIZED STEAMERS.

Spanish Trans-Atlantic Company, formerly called "Antonio López."

Pacific Mail-Line between San Francisco and Panamá touching at intermediate ports.

Steamers of Don Joaquin Redo. Line between San Francisco and Guaymas, touching at San Diego and Mexican intermediate ports.

Steamers of Mr. Louis Huller, running between San Diego Ensenada de todos Santos and San Quintin.

Steamers of Mr. Enrique R. Mejía, running between Veracruz, Morgan City and Galveston.

Steamers of Regil & Co., running between Veracruz and Progreso, touching at intermediate ports.

German Imperial Mail and Harrison Line, running between European and Mexican ports.

West India and Pacific Mail S. S. Co. running between England, the West India Islands and Mexican ports.

Alexandre Steamers, between New York, Havana and Mexican Ports.

Royal Mail S. S. Company, between European and Mexican ports.

Furmann Steamers between New York, Progreso and Veracruz.

XIV

GENERAL DESCRIPTION.

CONFIGURATION AND PHYSICAL ASPECT.

The enormous Cordilleras which traverse the vast extent of Mexican territory, give it a most peculiar aspect. The land slopes upward from the coasts to the interior of the country, forming picturesque valleys and precipitous ravines with frequent and abrupt changes of level, and forming beautiful cascades in the rivers that carry off their abundant waters.

Seen from the coast plains, the long crests of the mountains appear to be drawn with a background, which at times consists of a clear and serene sky, whilst at other times it presents itself full of clouds charged with rains and electricity. This crest is in different parts penetrated by passes affording access to the great central table land, which is limited on its eastern and western sides by the succession of peaks which form the centres of the extensive branches in which the Gran Cordillera is divided, and which, although a little different in structure, is really a continuation of the Cordillera which may be said to form the backbone of South America. This enormous mountain range takes its rise in Patagonia and runs in a northerly direction, throwing out ramifications of more or less extent. It runs parallel to the Pacific Coast, traversing the territories of Chili, Bolivia, Peru, Ecuador and Colombia. In Panamá and

Nicaragua the Cordillera is depressed almost to the sea level, but it rises again in the Republic of Salvador and Guatemala, and entering Mexican territory by way of Soconusco, it divides in the State of Oaxaca into two great branches, called the Eastern Sierra Madre and the Western Sierra Madre. The latter branch is interrumpted by the Rio de las Balsas, near its mouth at Zacatula; it is depressed on the western boundaries of the State of Guerrero, but rises again in the State of Michoacan, from whence it continues to the north-west, acquiring larger proportions as it crosses the States of Jalisco, Sinaloa, Durango, Chihuahua and Sonora. The Central Table land which is thus elevated by the two Cordilleras is crossed in different direction by other and smaller ranges, and has a gentle slope towards the north, terminating in the bed of the Rio Bravo.

For example, commencing from the coast of Veracruz the ground rises by steps until it crosses the crest of the eastern Cordillera. First we have plains affording excellent pasture, and interrupted by a few forests; these are followed by the extensive slopes that constitute the foot of the Cordillera; after that we find valleys and ravines on the slopes of the high ranges, and lastly we arrive at the high table lands of Puebla which are reached by passes in the Sierra, like that at Boca del Monte, with an elevation of 2,000 metres above the level of the sea.

The Sierra Nevada or the Popocatepetl range rises to the westward of these table lands and elevates the valley of Mexico to a height of 2,270 metres above the sea. Farther to the westward, the mountains of Las Cruces and Monte Alto separate the Valley of Mexico from that of Toluca, thus forming the most elevated plain within the Mexican territory, its elevation being 2,580 metres, and from this point the ground slopes downwards towards the Pacific by the same succesion of plains and valleys that we have seen on the eastern side.

Numerous mountain chains cross each other as well as the principal chains, forming in conjunction a series of eminences

which the illustrious Baron Humboldt styled the Mexican Andes.

The general configuration which has been above described and the different elevations referred to are shown in the following tables

	ELEVATION.	
Valley of Toluca	2580	metres.
Cañada de Ixtlahuaca	2527	,,
Valley of México	2270	,,
Plains of Apam [Tlaxcala]	2480	,,
,, ,, Puebla	2000 to 2150	,,
San Juan de los Llanos [Puebla]	2360	,,
Valley of Maltrata [Veracruz]	1691	,,
,, ,, Orizaba [Veracruz]	1227	,,
,, ,, Oaxaca	1550	,,
Cuernavaca [Morelos]	1525	,,
Plains of San Gabriel, do	1008	,,
Iguala [Guerrero]	919	,,
Basin of the Rio Balsas in the pass of Mescala	520	,,
Zitácuaro [Michoacan]	2000	,,
Morelia ,,	1950	,,
Pátzcuaro ,,	2190	,,
Ario ,,	1890	,,
Jorullo ,,	850	,,
Basin of the Rio Balsas in the pass of Las Balsas	123	,,
Tula [Hidalgo]	2047	,,
Tulancingo [Hidalgo]	2089	,,
Plains of El Cazadero	2300	,,
San Juan del Rio [Querétaro]	1950	,,
Bajío [Guanajuato]	1750 to 1790	,,
Guadalajara [Jalisco]	1523	,,
Valley of Ameca ,,	1180	,,
Tepic ,,	900	,,
Acaponeta ,,	64	,,
Sayula ,,	1385	,,

	ELEVATION.	
Zapotlan (Jalisco).....	1495	metres.
Plain of Atenquique (Jalisco).....	1248	„
Colonia.....	532	„
Plains of El Salado (San Luis).....	2000 to 2300	„
Valley of Maíz.....	1220	„
Tula de Tamaulipas.....	1171	„
Ciudad Victoria.....	449	„
Monterey (Nuevo Leon).....	486	„
Cerralvo „	380	„
Cuencamé (Durango).....	1740	„
Valley of the Nazas.....	1100	„

The predominating rocks throughout the territory of the Republic are porphyries, basalts, sienites and lime-stones, the mountains every where affording examples of these. The porphyries are found on the peaks in colossal and eccentric masses, such as the Cofre de Perote in Veracruz, the Organos de Actopan in Hidalgo and the Peña de Bernal in Querétaro. At all times they are found in veins and serve as walls for metalliferous veins, as is comonly found in extensive mining districts like that of Pachuca. The basalts are found presenting vestiges of enormous lava currents, as can be seen in the slopes of Ajusco in the Valley of México and on the Eastern slopes of the Cofre de Perote, whilst very frequently found rising in compact and enormous masses or in handsome prismatic columns which form the sides of ravines, as can be seen in Santa María Regla and Barranca Grande which terminates in the beautiful and picturesque Vegas de Metztitlan in the State of Hidalgo. The sienite constitutes the bases of many mountains, and on it we find resting a formation of slate, chlorite and many others, of which we have an example in the Zacatecas ranges. The lime-stones predominate in the plains and constitute the mass of many other mountains, whose centres are often corroded by the waters, presenting enormous caverns like that of Cacahuamilpa which is found on the northern frontier of the

State of Guerrero, and which from its extensive and numerous galleries, besides its infinite and beautiful formations and the tantastical aspect which it presents when iluminated by elecfric light, is considered one of the greatest marvels of nature.

The uneven and mountainous character of a great part of the Mexican territory, results in many parts in giving us picturesque valleys and a beautiful and enchanting flora. The mountains have their heads covered with eternal snow whilst at their feet we find the most beautiful valleys watered with pure streams which give fertility to the rich and fertile soil.

In one zone which has been called the volcanic zone and which extends from east to west, with a width of 90 kilometres, having its centre on the line that unites the volcano of Colima with that of San Andres Tuxtla, we find the principal volcanoes of the country. Some of these are entirely extinct, like those of San Andres de Tajimaroa, in Michoacan; the peak of Toluca in Mexico; Ajusco, Sierra de San Nicolas and Cerro Caldera in the Federal District and in the Eastern Districts of Puebla; whilst other volcanoes are giving continual signs of ignition, either by means of recent eruptions as in the case of Colima and San Andres Tuxtla, or by means of permanent "fumarolas" as can be observed in the craters of Jorullo, Popocatepetl and the Peak of Orizaba, which are continually producing an excellent class of sulphur. To the catalogue of these volcanic mountains ought to be added the Cofre de Perote in the same zone, because although its peak is not in the form of a crater, nevertheless we find several extinct craters and basaltic lava currents on its slopes, the latter running down to the sea and forming the reefs known as Boquilla de Piedras.

Outside of the zone above mentioned, the country shows in many parts vestiges of the most tremendous convulsions. The volcano of Ceboruco, in the District of Ahuacatlan, in the State of Jalisco has lately caused great excitement in that neighborhood by its succesive eruptions, which have caused the forma-

tion of a mountain range with its sides over–run by currents of lava.

The northern part of the Peninsula of California which has a range of mountains running down its whole length, is of a volcanic formation, and the same may be said of the central part of that Peninsula where the volcano of Las Virgenes rises.

Another of the remarkable districts of this country, and one which in remote times has gone through serious volcanic upheavals, is that known under the name of La Breña, in the region which extends to the south of the District of Durango. Basaltic scoria is found scattered in all parts of that District as well as hills and other eminences of a volcanic character, whilst the Cerro del Fraile not only contains a central crater, but several secondary craters, and from this hill can be plainly seen the two lava currents which once flowed over the plain and which can be easily traced by the different colors of the rocks.

I terminate this chapter with the following table of the principal peaks in the Mexican Cordilleras.

	ELEVATION.
Popocatepetl (México and Puebla).....	5425 metres.
Citlaltepec or Peak of Orizaba (Veracruz)...	5295 „
Ixtaccihuatl (México and Puebla).....	4900 „
Xinantecatl or Peak of Toluca (México).....	4578 „
Nauchampatepetl or Cofre de Perote (Veracruz).....	4089 „
Matlacueyatl or Malintzi (Ttaxcala).....	4107 „
Ajusco (Federal District).....	4153 „
Zempoaltepec (Oaxaca).....	3396 „
Peak of Quinceo (Michoacan).....	3324 „
Volcano of Colima (Jalisco).....	4378 „
„ „ Colima (Jalisco).....	3884 „
„ „ Ceboruco (Jalisco).....	1525 „
Peak of Tancítaro (Michoacan).....	3860 „
Patamban (Michoacan).....	3750 „

	ELEVATION.
Veta Grande Grande (Zacateca).....	2786 metres.
Summit of Jesus María (Chihuahua)	2511 „
Cerro del Proaño (Zacatecas).....	2368 „
Las Navajas (Hidalgo).....	3212 „
Gigante (Guanajuato)	3250 „
Los Llanitos (Guanajuato).....	3360 „
Cerro Culiacan (Guanajuato).....	3246 „
Volcano of Jorullo (Michoacan).....	1300 „
„ „ Tuxtla (Veracruz).....	1000 „

RIVERS AND LAKES.

As has already been shown, the territory of the Republic is exceedingly mountainous, its two principal ranges being excessively steep in the direction of the coast. This circumstance as well as the narrowness of the country in the more southern regions, prevents the collection of large masses of water, which with their slow current could facilitate the interior navigation of the country.

On the plains of the central table land, the rivers are generally small and shallow, and many of them only carry water to the interior lakes or to other larger rivers during the rainy seasons, the torrents which then fill their beds having opened passes to the mouths on the sea coast.

On both the eastern and western slopes of the Sierra Madre the water rushes in torrents down the ravines, giving a beautifull freshness and fertility to the country they irrigate, and only begin to have a tranquil flow when they reach the extensive plains close to the seacoast.

This extraordinary configuration of the country, has formed a multitude of watersheds as well as deep and extensive valleys, which although they make communication difficult, offer at the same time, a compensation in the additional beauty of the landscape and also present most favourable circumstances for the defense of the country against foreign invasion.

The principal river basins, both for their extent and for the number of the rivers which they contain, are the following:

Basin of the Rio Bravo del Norte.

Its tributary rivers are: The River Pecos, in the United States territory; the River Conchos in Chihuahua, with its affluents the Florido, Parral, Allende, Nonoava, Sativó and Chuvisca; the Rio Sabinas or Salado, in Coahuila, Nuevo Leon and Tamaulipas, with its affluents the Sabinas Hidalgo; the River San Juan, in Nuevo Leon and Tamaulipas, formed by the confluence of the Monterey, and Pilon.

Basin of the Mescala or Balsas.

The principal rivers in this basin are: The Zahuapam, which in the State of Tlaxcala forms the beautiful fall at the Mill of San Diego; the Acatlan, the Coetzala formed by the Rivers of Atlixco, Izucar and Atila in Puebla: the Mixteco in Oaxaca: the Rivers of Amatzinac or Tenango and Amacusac in the States of Morelos and Cuerrero. The waters of this last river rise on the slopes of the Volcano of Toluca and form the rivers of Almoloya, Coatepec and Ixtapa, and uniting in the Pilcaya River they are lost under the immense limestone ranges of Cacahuamilpa, where the famous cavern is found. These rivers afterwards reappear issuing from two beautiful grottoes in the neighborhood of that cavern, and then unite in one of the most picturesque spots of the country, where they form the river Amacusac. The basin that we are describing, also contains the Rivers Tlapa, Mescala, Yolotla, Tetela and others in the State of Guerrero as well as those of Cutzamala and Zitácuaro, Tacámbaro, and Marqués in Michoacan. This last river is formed by the Oro, Amatlan, Parácuaro, Urecho and others, the Parácuaro River being known by the name of Cupachito in the District of Uruapam, in the Southern part of which it forms the beautiful and picturesque falls of Tzaracua.

Basin of the Pánuco.

Under the successive names of Cuautitlan and Nochistongo in México; of Tula in Hidalgo; of Tantojon in San Luis and Pánuco in Veracruz and Tamaulipas, this river reaches the Gulf after traversing all these different States. Its tributaries are: the Ixmiquilpan and Amajac in Hidalgo; the San Juan del Rio and the Estoraz in Querétaro; the River Tamuin which is formed by the Tampoan, the Rio Verde and the Santa María in San Luis Potosí, and lastly, the River Capadera in Veracruz and Tamesin in Tamaulipas.

Basin of the Rio Lerma.

Like those already spoken of, this river is known under different denominations. From its rise in the mountains to the Southeast of the City of Toluca, to its fall in the great Lake of Chapala, it is known under the name of the Lerma River; afterwards it is known as the Guadalajara, forming within the Territory of Jalisco the magnificent falls of Juanacatlan; it passes to the north of the capital of the State and subsequently takes the names of Tololotlan and Santiago, until it falls into the sea near the Port of San Blas. During its long course through the country it receives the Rivers of Atlacomulco and Malacatepec in the State of Mexico; the Laja, Irapuato and Turbio in Guanajuato and the Zula, Rio Verde, Juchipila, Bolaños and Tepic in Jalisco.

Basin of the Grijalva and Usumacinta.

The beautiful river of this name rises within the territory of Guatemala, and is known under the name of Mescalapa in Chiapas and Grijalva in Tabasco. Its principal tributaries are the Chicomucelo, Blanco Suluapa and Ocuilapa in Chiapas; the Ixtacomitan, Teapa, Puyatengo, Tacotalpa, Puscatan and Salto in Tabasco.

The Usumacinta takes its rise in the same district and re-

ceives the rivers Chixoy, La Pasion and San Pedro; before reaching Jonuta in Tabasco, it divides into two branches one of which takes the name of Rio de la Palizada and discharges into the Laguna de Términos, a bayou on the Coast of Yucatan. The other branch preserves the name of Usumacinta, and again divides itself into two branches, one of which discharges into the Rio Grijalva and the other over the bar of San Pedro y San Pablo.

All these currents, which are interlaced one with the other and consequently form new rivers, constitute altogether, a hydrographic region of the greatest importance.

Basin of the Papaloapam.

The streams which form this picturesque and powerful river, originally proceed from the broken ranges of Oaxaca, and afterwards spread themselves out on the level plains which border the coast of the southern part of the State of Veracruz. The rivers Tonto and Quiotepec, rising in the districts of Villa Alta and Tesechoacan in the State of Oaxaca, and the Rivers Limon and Rio Blanco in the State of Veracruz, irrigate a magnificently fertile country, giving it a richness and productiveness that are seldom found. These rivers are all tributary to that which is eventually called the Papaloapam River, and which flows into the gulf over the Barra de Alvarado.

It would be an interminable task to enter into a description of all the watersheds that form the beauty of the Mexican territory, and we will only go on to say that those which have been already mentioned are followed in importance by that of the River Coatzacoalcos, which is called El Corte at its rise; by those of the rivers Yaqui, Mayo and Magdalena, in Sonora; by the Fuerte, Mocorito and Culiacan in Sinaloa; by the Rivers Nazas and Mesquital, in Durango; the Purificacion or Soto la Marina, in Tamaulipas; and by the rivers on the Northern coast of Veracruz of which the Necaxa and San Marcos or Cazones are the most picturesque.

In the interior of the country the mountain ranges enclose certain parts of the valleys, and prevent the outflow of the waters which flow into them. Extensive lakes are thus formed, which even in the dry seasons are not dried up by the active evaporation and dry winds natural to this elevation. Amongst the basins which are thus enclosed the most remarkable is that of the valley of Mexico, the only outlet to which is by the River Cuautitlan by way of the enormous cut of Nochistongo. This remarkable work was excavated between the hills of Jalpam and Sincoque during the time of the Spanish Government the Engineer of the work being Don Enricó Martínez.

Another enclosed basin, and not less important than the others, is that known under the name of Barranca Grande in the State of Hidalgo, and to the North of Pachuca. This remarkable depression takes its rise in the valley of Apulco, to the North of Tulancingo; it first runs in a westerly direction which eventually changes to the north west, and it increases in width as well as in depth until it terminates in the beautiful and fertile Vale of Metztitlan. In many places the sides of this remarkably Valley show beds of obsidian, or of basalt in the form of columns or of amorphous masses, while the bottom of the valley is watered by a large stream which proceeds from the picturesque falls of Alcholoaya and discharges into the Lake of Metztitlan. This river is fed by others which come from Tulancingo, Regla, Guadalupe and other parts, each one of them being enclosed in its corresponding ravine.

The sides of these ravines show the most varied geological formations, which the scouring of the water has now uncovered for the study of the geologist; whilst in others we find walls of handsome basaltic columns, which with their prismatic forms and well arranged layers are the admiration of all who see them. A very unique and remarkable specimen of this formation is found in the Ravine of Regla, where there is a large reduction works moved by the water which flows through it. This extraordinary formation constitutes one of the most

wonderful natural spectacles to be found in the country, but others of more or less interest to science will be found in the valley of the Zacatlan in Puebla, in Actopam and in the State of Veracruz. In Jalisco, in Oaxaca, in Guerrero, and in almost all the States which are traversed by the Sierra Madre, remarkable works of nature are found, a minute relation of which would extend this book to undue limits.

The Lakes found in the country may be divided into five groups:

1st. Lakes which do not receive any current and which have no outflow, being only fed by the rain: In Chihuahua, Lagunas del Castillo, Encinillas and Jaco; in Durango, the Lake of Guatimapé. In Coahuila, the Lakes of Santa María and Agua Verde. In San Luis, the Lake of Santa Clara and many salt water lakes in the western part of the State. In Jalisco, the Lake of Magdalena, which was formed by a cloud burst which caused great destruction, and besides that, the Lakes of San Marcos, Zacoalco, Atoyac, Sayula and Zapotlan. In Michoacan, Tacáscuaro and Pátzcuaro, although the latter receives the waters from the stream of the same name, and a few others. In the Valley of Mexico, Xaltocan and San Cristobal. In Puebla, Quecholac and Alchichica. In Hidalgo, Tecocomulco and Zupitlan In Morelos, Tequesquitengo and Mazatepec.

2nd. Lakes formed by the widening of the beds of the rivers and traversed by the same:

In Jalisco and Michoacan; Chapala which is traversed, by the River Lerma. In the State of México; the Lake of Lerma which receives the river Acalote, draining the slopes of Atenco, Jajalpa, Techuchulco, Tescaliacac and the springs of Almoloyita, and which has an outflow in the River Lerma. In the Valley of Mexico, Lake Xochimilco receives the River of San Buenaventura which descends from the Ajusco ranges, and feeds the Viga canal which unites it to Lake Texcoco.

3rd. Lakes which do not receive any stream but are the sources of rivers:

In Guanajuato the Lake of Yuririapúndaro, a stream from which discharges into the River Lerma. In Michoacan, Lake Zipimeo, from which a stream also falls into the same river. In Veracruz, Lake Catemaco from which rises the River San Andres which discharges into the San Juan River, and the Laguna del Salado forming the source of the river Acula which discharges in the Alvarado Estuary.

4th. Lakes which receive streams without having any outflow:

In Sonora; Lakes Guzman, Santa María and Carmen, which respectively receive the rivers of Casas Grandes, Santa María and Patos. In Coahuila, Lake Muerto or Mayran into which the picturesque river Nazas discharges. In the Valley of Mexico, Lake San Cristobal which receives the flood waters from Pachuca; Lake Texcoco, which is fed by the rivers Mesquipayac, Papalotla, Texcoco and others of less importance on the eastern side, as well as the Consulado and Guadalupe on the western; Lake Chalco, which is fed by the rivers Tlalmanalco and Tenango. This Lake is divided from that of Xochimilco by the causeway of Tlahuac. In Michoacan, Lake Cuitzeo is principally fed by the River Morelia and by occasional floods in the Guadalupe and Bosquecillo streams. In Hidalgo the Lake of Metztitlan receives the waters of the Rio Grande; the Lake of Apam, in the rainy season receives the waters from the streams of the same name.

5th. Lakes which have communication with the sea and which are commonly called Penilages or Albuferas:

In Tamaulipas, Laguna Madre. In Veracruz, Tamiahua, Mandinga and Santecomapan, the Camaronera and Tequiapan, which form the Estuary of Alvarado. In Tabasco, Santa Ana, Cupilquillo and Mecoacan. In Campeche, the Laguna de Términos. On the Pacific Coast: in Jalisco, the Albufera de Mezticacan. In Colima, Cuyutlan. In Guerrero, the Laguna de Tecpan, Coyuca and Nexpa. In Oaxaca, Chacala, Altotongo and the upper and lower lakes in the Isthmus of Tehuantepec.

EXTENT OF THE COASTS.

The Mexican Republic being situated between the Atlantic and Pacific Oceans, it necessarily has a long extent of coast, the two seas being separated by the distance of two thousand kilometres, measured in a direct line between the two extreme points of the boundary line with the United States.

As |the Pacific Coast has a general bearing towards the southeast, it keeps continually approaching the Atlantic, thus narrowing the continent until it arrives at the Isthmus of Tehuantepec, where the distance between the two seas does not exceed 210 kilometres. From this point the coasts again separate, forming the Peninsula of Yucatan on the Atlantic side, whilst the coast on the Pacific side continues in the same general direction towards Central America.

The Coasts of the Mexican bight and of the Carribean Sea have a length of two thousand five hundred and eighty kilometres of which four hundred belong to the State of Tamaulipas, six hundred and forty to Veracruz, one hundred and ninety to Tabasco, three hundred and sixty to Campeche and nine hundred and ninety to Yucatan.

On the Western side, the Coast has a length of six thousand two hundred and fifty kilometres, of which three thousand belong to the Peninsula of California, eight hundred and sixty to Sonora, five hundred and ten to Sinaloa, five hundred to Jalisco, one hundred and sixty to Colima, a hundred and thirty to Michoacan four hundred and sixty to Guerrero, four hundred and ten to Oaxaca and two hundred and twenty to Chiapas.

NATURAL MINERAL WATERS.

The Republic is rich in springs of water both cold and thermal, which are impregnated with mineral substances, whilst many of them contain matter in solution which will incrustate or petrify whatever they touch. Some of these waters have

been analyzed by Messrs. Rio de la Loza, Oliva and Lambert, and the results of these studies having been condensed by Mr. Alfonso Herrera in the Mexican Pharmacopea, we are enabled to give the classification of some of the principal springs.

Acid waters are found in the crater of Popocatepetl, and contain sulphuric acid.

Alkaline or carbonated waters, whose principal characteristic is the great quantity of carbonate of soda which they hold in solution, combined with free carbonic acid which makes them effervescent.

To this class belong the waters of the Well of Guadalupe, four kilometres to the north of Mexico City, Peñon de los Baños, four kilometres north east of the same city, which present a great similarity to the waters of Carlsbad and the Mont d'Or; Cuincho, 10 kilometres to the northwest of Morelia, and Salatitan, eight kilometres to the northeast of Guadalajara.

Sulphureous waters, which are distinguished from the others by their charasteristic odour of sulphurated bydrogen and by their special property of precipitating lead, silver and other metals in the form of black salts. The most important of this class are: Those in the Springs of Santiago and of San Pablo in the City of Puebla, those of Puruándiro, Monterey and Islas Marías, those of Las Derrumbadas, 72½ kilometres to the east of Puebla, and those of La Laja to the southeast of Ahualulco, State of Jalisco.

Ferruginous waters; the taste of which is very similar to that of ink; they become black by the admixture of tincture of gall nut; they become blue on mixing protocyanide of iron or of potasium, though the treatment for this purpose takes a little time. These waters contain a remarkable amount of iron, which is generally found as a carbonate of protoxide, which is dissolved by the excess of carbonic acid held by these waters in solution. Allowed free contact with the air, the gas frees itself and the protoxide absorbs the atmospheric oxygen and transforms itself into sesquioxide which is precipitated under the

form of hydrate. To this class belong the waters of Valparaiso near Durango, of Santa Cecilia to the north of the City of Mexico, and of Alonso or Llamas in Guadalajara.

Saline water, which contains more or less proportions of different salts, which commonly are sulphates or carbonates of soda, lime or magnesia; chlorides of sodium, calcium or magnesia; some contain potasium, others lithia, whilst other have been found to contain rubidium, iodide and bromide.

To this class pertain the waters of Atotonilco, situated 52 kilometres north of Mexico, and those of Lake Texcoco which is on the eastern side of the city.

The following table shows the temperature of the different waters:

Peñon de los Baños	44°5
Guadalupe Well	21. 5
Cuincho	30
Salatitan	41
Springs of Santiago and San Pablo	28 to 28. 5
Monterey	41
La Laja	101
Atotonilco	54 to 58
Texcoco	20

The name of Atotonilco is very common amongst Mexican towns and always indicates the proximity of thermal springs.

Besides the above, I have also acquired information with respect to other springs; such as the Baths of Peñita and Chichimequillas, Tequisquiapam and Toliman in Querétaro; Pathé, Taxidó and Manguani, in the Municipality of Tecozautla, in the State of Hidalgo.

The springs at Chucándiro in the State of Michoacan; San Sebastian, Tarameo, Chuen, Isla de los Hervores, Temascal, Araron, Tiquicheo de la Laguna, Taymeo, el Barreno and Zinapécuaro, are generally found to contain hydrocloric acid and sulphureous substances. The calcareous waters of Purrua near

Jungapeo, deposit an incrustation on any article that is left in them. In Sonora we have several thermal springs of sulphureous and ferruginous waters, with a temperature varying from 60° to 70°. The principal ones are found between the towns of San Marcial and Baroyeca.

In Nuevo Leon, mineral springs are found in several places, the principal being these of Topo, and Potrero Prieto, sixteen kilometres to the north of Galeana: Las Huertas, 25 kilometres south of Montemorelos, and the Spring of Huajuco close to the town of the same name. The water from these springs, on cooling liberates the sulphurated hydrogen which it contains, and although selenitous is drinkable.

In the State of Aguascalientes, which has received its name from the abundance of thermal springs which it contains, the principal are those found in the capital, in the Hacienda de la Cantera and those of Ojo Caliente and Ojo Calientillo in the district of Calvillo. Near Silao in the State of Guanajuato thermal springs exist on the Hacienda of Aguas Buenas and of Comanjillo, as well as others which are known under the name of Lodos de Munguía.

In San Luis Potosí the following can be enumerated: Ojo Caliente in Santa María del Río: its waters contain salts of soda and magnesia, and ferruginous waters in the Hacienda Labor del Rio. Thermal springs at Lucio in the Municipality of Reyes. Hacienda de Vanegas in the Municipality of Cedral, Ojo Caliente, Vigas and San Sebastian at a distance of thirty to thirty-four kilometres from the City of Rio Verde. Baños Grandes, near the town of Tamuin. Ojo Caliente, 8 kilometres to the north of Tanlajas. Bañito de Ojo Caliente, 17 kilometres to the South of Ciudad de Valles: these two last springs contain sulphureous waters. Cruces in Moctezuma, Tule and Freno in Santa María del Rio.

In the State of Morelos the best known springs are: Agua Hedionda, near the town of Cuautla, and La Vega near Xochitepec.

In the State of Mexico we have springs of sulphureous waters, such as the Ojo de Almoloya and the Baths of Ixtlahuaca, Tilvito and the Rio San Gaspar in the Villa del Valle. Besides these we have Atempa in Yahualica, and Puentecillos in Sultepec.

From the studies of Messrs. Alfonso Herrera and Andres Almaraz I have extracted the following data.

The waters of Araró at Zinapécuaro in the State of Michoacan:

Temperature		85°
Fixed substances	per litre	1.50

Contents: chloride of sodium in abundance, sulphate of magnesia, free and combined carbonic and silicic acid.

Water from Tarameo, San Juan, State of Michoacan; contains 6.50 per litre of fixed substances, which are: chloride of sodium, magnesia, free and combined carbonic acid.

Water from Bartolilla, Zinapécuaro, Michoacan.

Temperature	32°

It contains a small proportion of fixed matters which mostly consist of silicic acid and carbonate of potasium. This water is so pure that it can be compared with that of certain artesian wells, the waters of which have passed through impermeable strata without having dissolved any large proportion of soluble matters. This water may very properly be used in all those operations for which distilled water is recomended.

XIV

HISTORICAL SECTION.

IMMIGRATION AND ANCIENT HISTORY.—FROM PREHISTORIC TIMES, UP TO 1521.

Up to the present date nobody has been able to penetrate the veil that hides the origin of the first inhabitants of Mexico. The ruins of buildings which are found scattered throughout our territory demonstrate a series of immigrations from the North to the South, a fact that is further confirmed by the way in which languages are distributed in this part of the American continent. These ruins, the importance of which is every day better appreciated, as well as the division of languajes, show at times, traces of the passage of different tribes in search of lands suitable for their purposes, and in other places show a fixed residence where the people had formed an organized community. In America, the same as in Europe, neither history nor tradition reveal the origin of the first inhabitants; in the new continent as well as in the old, we find the remains of great buildings, which have been destroyed in the course of centuries, but which are a standing proof of the persevering and laborious character of ancient and unknown generations.

Different historians, basing their suppositions on the interpretation of hieroglyphics and native papyri, have attempted to fix the itineraries which were followed by the races which populated the fertile regions of Anahuac, and particularly of

the seven families which successively emigrated from the North, all speaking the same language, the *Nahuatl* or Mexican; but history does not reveal the mystery of the multiplicity of languages of such a different character, and still less does it reveal the reasons which obliged these races to abandon their original country. According to the descriptive and comparative tables of the Indian languages which have been prepared by Pimentel, none of the 108 languages which are there classified have any analogy with the Asiatic languages, and not even with the Othomí, which for its almost monosyllabic character and structure has been thought to be akin to Chinese. Nevertheless, the identity of the Esquimaux language proves a direct communication between Asia and America, a fact that to my mind is still further proved by the general form of the ancient monuments and the architecture employed in their construction. The tumulus, according to John Lubbock ("Prehistoric man"), are found scattered throughout Europe and Asia, from the Atlantic up to the Ural mountains, covering a great part of the steppes of Asia, from the frontiers of Russia to the shores of the Pacific, and from the plains of Siberia to those of Hindoostan. In the same manner, monuments of the same kind are found throughout Mexico; and from the shores of the Gila to the banks of the Usumacinta and from the coast of the Atlantic to that of the great Pacific, the pyramids in this country, like those in the old world, are a most admirable developement of the same idea.

To this observation it has been objected, that the necessity being the same, the manner of overcoming it must be similar; but this objection is completely destroyed if we only fix our attention on one very significant fact amongst many others. All of these peoples, whether of the ancient or of the new world, deposited different objects and utensils in the tumulus together with the bodies, under a uniform but independent idea of the necessity for doing so, and according to the opinion of Lubbock, with whom I agree with respect to the Americans,

it is demonstrated that these ancient races had a belief in the immortality of the soul, and in a material existence after death.

In my "Comparative Essay on the Mexican and Egyptian Pyramids," I not only draw attention to the form of these monuments, which might have been adopted by different peoples without any communication of ideas, but more particularly to their external and internal details, and from their undeniable similarity, I draw the deduction of the identity of knowledge in one and the other nation, though my inferences by no means mean to say that the ancient inhabitants of Mexico, are of Egytian origin, an inference that has been attributed to me by persons who doubtless got no further than reading the title of my pamphlet.

The learned Don Fernando Ramírez, who is such a competent authority on Mexican history, in treating of arms and devices, shows how the oriental similarities are continually found in the ancient Mexican customs, finding in the commemorative stone of Tizoc, which is called the sacrificial stone, and in its groups of conquerors and conquered, a similarity with the reliefs of the same kind in Assyrian and Egyptian monuments.

To go further yet: the ancient monuments of India and those of the Peninsula of Yucatan, particularly those of Uxmal and Chichen-Itzá, which in the art of construction and ornamentation differ from the others on this continent, show a most remarkable similarity.

All these circumstances and many others which could be brought forward, place me in the ranks of those who believe in the direct communication between the inhabitants of the two continents, that the immigrations have proceed from the North of what is today called the New World, but at the same time, without decidedly disputing the belief that other people immigrated from other regions, and especially from the East. Perhaps with time new data will be discovered to confirm this idea, which has been so ably developed by my learned friend

Don Alfredo Chavero in his contribution to the work entitled "Mexico á través de los siglos."

The history of Mexico commences with the annals of the Toltecas, notwithstanding the existence of other nations, which like the Ulmecas, Xicalancas and Mayas, and even the Othomíes, are considered the most ancient inhabitants of Mexican territory, but who, with the exception of the Mayas, belong to a pre-historic period.

The Toltecas, who constituted a civilized nation, building temples and cities and thoroughly understanding agriculture, the arts and the computation of time, inhabited a country called Huehuetlapallan. somewhere in the Northern part of the continent; but on account of civil discord which was promoted by two lords of the city of Tlachicatzin, the latter with a great number of their followers and families, were driven from the country, and finding themselves obliged to emigrate, they directed their steps in a southerly direction. This happened in the year 544 of the Christian Era, according to Orozco y Berra. During their peregrination they founded several cities, in which they remained for longer or shorter periods; afterwards continuing their journey, but always leaving a population behind them. These cities were Tlapallanconco or Tlapallan la Chica, in 552; Hueyxallan, 567; Xalisco, in 559, and Chimalhuacan-Atenco in 267. They afterwards passed on to Tochpan in 572; to Quiayahuitztlan-Anáhuac in 577, and to Zacatlan in 583. In 590 they founded the towns of Tutzapan; in 596 they settled in Tepetla; they passed on to Ixtachuexuca in 619, to Tollancinco in 645, and lastly to Tollan, which was the metropolis of their nation in 661. According to the annals of Cuautitlan that town was founded in 674, showing a difference of 13 years between the two chronologies. It therefore appears, that from the time of their exodus from their original country up to their arrival in Tula, where they laid the foundations of a powerful kingdom, their peregrination lasted 117 years.

This culturedpeople, lived prosperously through the reigns

of eleven monarchs, developing their civilization and the prosperity of their country through their respect for law, their love of work, and their great ability in agriculture and the arts, until the year 1116 when their nationality was completely destroyed through their civil wars with the people of Nextlalpam and the unfortunate war which they sustained against the king of Xalisco, who claimed the throne of Tula.

Once the Toltecas obtained full possession of the territory in which they founded their nation, they established a monarchical form of government, by the exaltation to the throne of Chalchiuhtlanetzin in 667, and according to the chronology of Ixtlilxochitl his successors were as follows:

1	Chalchiuhtlanetzin	667
2	Ixtlicuechahuac	719
3	Huetzin	771
4	Totepehu	823
5	Nacaxoc	875
6	Mitl	927
7	Xiuhtlalzin, queen	986
8	Tecpancaltzin	990
9	Topiltzin	1042
	Destruction of the Kingdom	1116

The destruction of the Toltecas was followed in 1117 by an invasion of Chichimecas, a tribe of hunters who spread themselves over an enormous extent of territory that to day constitutes part of the States of Mexico, Hidalgo and Puebla. Their starting point was the country of Amaquemecan, which historians place in a distant region of the northern part of the country, in the neighborhood of Huehuetlapallan. The Chichimecas having heard of the destruction of the Toltec kingdom, and obtained confirmation of the rumors through the explorers sent to Xalisco, they determined to occupy the abandoned territory, and with that object they started on their southerly journey in the year 1117. Starting from Oyame, according to Orozco

y Berra, "They touched in Cuextecatlichocayan and Coatlicamac, places which were also inhabited hy the Mexi, which proves that they passed by Xalisco and Michoacan, and taking the direction of Tepenenec. they reached in the city of Tollan. They found the city entirely deserted, and leaving a few persons there to populate it afresh, Xolotl marched in a northeasterly direction so as to reach Mixquiyahualla and afterwards Actopan, after which, turning in a southerly direction, he entered the valley at a place where he found a great many caves, and at no great distance from Xaltocan, which he called Xoloc; this being in the year 1120." The Chichimecas continued discovering and taking possession of many other places.

During their perigrination, the Chichimecas found the towns that in other times had been flourishing and well peopled, like Tula and Teotihuacan, in a deserted and ruined condition, and when they arrived in the valley the few Toltecas who had survived the disasters of their nation were scattered in distant countries such as Tehuantepec, Quautemallan, Tecocotlan, Coatzacoalco and Tiauhcohuac, whilst they were settled in rather larger number in Quauhtitenco, Chapoltepec, Totoltepec, Tlaxcallan, Cholollan, Tepexomaco, and more especially in Colhuacan which formed a distinct kingdom, and from whose name is derived that of Colhuis.

In the year 1820 of the Christian Era, according to Fray Diego Durán, seven civilized tribes called Nahuatlacas started from Chicomoztoc, whose peregrination lasted over eighty years, bringing them at last to the valley of Mexico. Chicomoztoc is a word signifying seven caves, but preferably alludes to the seven tribes or to the cities from which they started.

The first of these tribes to arrive in the valley was that of the Xochimilcas, who overran the banks of the great lake and fixed their residence in the place which today goes by their own name, in the south of the valley, extending their dominion without any opposition from the Chichimecas, as far as Tochimilco on the southern slopes of Popocatepetl, and including

many places which still exist. Shortly after the arrival of the Xochimilcas, the Chalcas arrived, settling themselves on the southern part of the lake in a place called Tlalmanalco, which they made the capital of their nation, and including Amecameca, Tenayo, Ayotzinco, Chalco and Atenco.

The Chalcas were followed by the Tepanecas who colonized the region to the west of the lake, and divided their court between Atzcapotzalco and Tlacopan (Tacuba) extending their dominion in a northerly direction to Tlalnepantla and Tizayuca, and in a southerly direction to Atlacuihuayan (Tacubaya).

The last tribe of Nahuatlacas to arrive in the Valley of Mexico, was that of the Aztecas, or Mexicans, whose annals form so interesting a part of the history of Mexico, both for the events which proceeded their settlement, as well as for those which afterwards prepared and brought about their complete ruin.

The Texcocan tribe reached Tenayuca, where they were received by the king Xolotl. They occupied the eastern shores of the great lake and founded the kingdom of Acolhuacan, one of the most powerful of Anahuac, establishing their capital in Texcoco. The Chichimecas entered into friendly relations with this tribe and adopted their more civilized language and customs.

The Tlahuicas crossed the ranges of Axosco and took possesion of the country of Quauhnahuac (Cuernavaca), of Yautepec and other districts of the hot country.

The last but one of the tribes to arrive was that of the Tlaxcaltecas, who first settled between the Chalcas and the Texcocans; but not being satisfied with their neighbors, they continued their wanderings in an easterly direction and found a more ample territory at the foot of the mountain Matlalcueyatl or Malinche. They conquered the Ulmecas and Xicalancas and founded the famous oligarchy of Tlaxcala, governed by a senate formed of the chiefs of the four districts into which their territory was divided.

According to Clavigero, the Nahuatlacas who up to the year

1600 (820 according to Fray Diego Durán and the Codex Ramírez) lived in their original country of Aztlan to the north of the Gulf of California, were persuaded by Huitziton, a personage who enjoyed great authority amongst them, of the propriety of noving their residence, and they at once commenced their emigration to the south, crossing the river Colorado, which other historians, and amongst them Torquemada, believed to be a branch of the sea.

Having crossed the river Colorado above the 35th parrallel, they travelled in a southerly direction until they arrived at the river Gila, where they appear to have remained for some time, judging by the ruins of great buildings which are there found. From thence they continued their travels, and rested some time in another place about 250 miles to the northwest of Chihuahua, which is now known by the name of Casas Grandes, from an extensive building whose ruins remain to this day. From Casas Grandes they crossed the broken ranges of Tarahumara and reached Hueicolhuacan (Culiacan), where they remained for three years, building houses and carving a wooden statue, whieh represented Huizilopochtly their special god.

From this point they started afresh, taking their god with them, who was carried by priests selected for the purpose on the Teoicpalli (Divine Chair), and they arrived in due time at Chicomoztoc, a place that, according to the presumption of Clavigero, is today known under the name of La Quemada, to the South of the city of Zacatecas, up to which point the seven Nahuatlaca tribes travelled in company.

Whether for the disputes which arose between these tribes, or whether it was in obedience to the orders of their god, as interpreted by the priests, the tribes separated, and each one pursued its way towards the south in the following order: Xuchicaltecas, Tepanecas, Colhuas, Chalcas, Tlahuicas, Tlaxcaltecas, the Aztecas remaining behind with their god and afterwards continuing their journey by way of Ameca, Cocula, Sa-

yula, the maritime province of Colima, Zacatula, and Malinalco, and reaching the famous city of Tollan in 1196.

In Coatlicamac, during the journey, the tribe divided into two sections, which in spite of their rivalry travelled together until they settled on lake Texcoco, one tribe taking the name of Tlaltelolcos and the other that of Tenochcas. On their travels through Michoacan, according to the pictures left by the Aztecas themselves, they acquired the horrible practice of human sacrifice.

They remained nine years in Tula and eleven in other places in the neighborhood; after which they pased on to Tzompanco, where the Lord of the city married his son Ilhuicatl to a noble Mexican maiden, from which marriage was born Huitzilihuitl, in Tizayuca. From this latter place they successivelly passed on to Toltetlac, Tepeyacac, and Chapoltepec, and as they were continually disturbed in this latter place by the other tribes, they took refuge in Acocolco, a group of islands in the western part of the lake.

Twenty three years after their arrival in the valley, the Aztecas, obeying the suggestions of their priests, in spite of the theocratic authority of these having been substituted by the military authority of a warrior, recommenced in 908 the wanderings which are shown in the hieroglyphics now in the Museum. From Xico, which was their starting point on Lake Chalco, they marched in a northerly direction, traveling all over the valley, the boundaries of which they hardly crossed, and after many wanderings they returned in 1279 to Chapoltepec, where they settled in the immediate neighborhood of the Tepaneca nation, and by their establishment in that spot gave rise to a series of important events which prepared the fundation of the great Tenochtitlan.

The bellicose and warlike character of the Aztecs, who believed that their actions were adjusted to the divine orders issued by their God Huitzilopochtli, as spoken through the mouths of the priests, did not allow them to maintain peace-

able relations with their neighbors during their residence in Chapoltepec; at times they appeared to be in submission to the King of Culhuacan, settling into the places like Tizapan which that monarch designated, whilst at other times they broke out into open rebellion, carrying on a war of extermination, their arms being ordinary canes and lances which they threw by hand or by a machine called *atlatl.*

The state of inquietude in which they were maintained by they priests and the continuous menaces of their jealous neighbors, amongst whom were included the powerful Tepanecas, whose capital was Atzcapotzalco, obliged them to elect the valiant Huitzilihuitl for their chief and to execute works of circumvallation for the defense of their hill. In their first skirmish with the Chalcas they had the misfortune to lose their intrepid chief, who was killed in Culhuacan, whilst his followers took refuge in Atlacuihuayan, where they reorganized and invented their new apparatus for throwing lances, called *atlatl* from which word is derived the name of Atlacuihuayan which is now Tacubaya.

This disaster was followed by the submission of the people to the King Colhua, who assigned them the land of Tizapan as a residence, afterwards permitting them to enter into trade with his own people and eventually condescending, either through fear or from the desire of procuring the adhesion of this valiant and dangerous people, so far as to grant them the privilege of entering into personal relations with his own subjects, and delivering his own daughter to them for the service of their god Huitzilopochtli. These circumstances, that ought to have constituted a solid foundation for the alliance of the two peoples, through the iniquitous conduct of the Mexicans, only resulted in increasing the odium in which they were held by the King. The princess was cruelly assasinated and her skin employed to cover a young man, a fact that was only discovered in the darksome temple, by the light of an incense burner, when the king himself had been invited to honor the festivities and to

present his offering of flowers and partridges to this new divinity, which the Mexicans themselves called the *woman of discord.* The natural exasperation of the people of Culhuacan was such, that they impetuously threw themselves on their ferocious enemies, obliging them to take refuge among the rushes of the lake, from which they were hardly able to gain the banks, where they reformed and attacked their enemies, striking terror into them with the enormous number of lances which they threw. After passing a deep river, which undoubtedly must have been a natural canal of communication between the sweet and salt water lakes, they spread themselves over the villages of Ixtapalapan, Acatzintitlan, Ixtacalco and Mexicalcingo, where they constructed a bath or *temazcalli*, and to Mixiuhtlan, where one of their principal women underwent her confinement, that being the signification of the word as represented in the hieroglyphics of the Museum. Mixiuhtlan is today the suburb of San Pablo. Submissive as they always were to the orders of their priests, their actions were always directed to further the objects which they proposed. This blind obedience, which was the principal cause of their religious fanaticism, always kept them in the place which had been elected by their god for the establishment of the city, believing as they did, that every object by them observed was nothing short of miraculous; whether it was a crystaline spring rising at the foot of a handsome tree, a common canebrake, the willow trees on the sides of the streams or even the aquatic animals floating on the water: all were taken to mean favorable omens for the termination of their sufferings. A group of islands washed by the transparent waters; a prickly pear tree growing out of a fissure in one of the islands; a corpulent eagle resting on the prickly pear with its claw still covered with the handsome feathers of the birds that it had eaten; and lastly a snake held in the claws of the eagle, made a vivid impression on the imagination of the Mexicans, and determined them to fix on this spot in the lake as the

place on which to found their nation, which from a condition of slavery eventually rose to dominate the whole valley.

This city was founded in 1325 under the name of *Tenochtitlan*, in honor of their priest and chief *Tenoch*, though it was afterwards changed to *Mexico*; which is derived from *Mexitle*, the god of war, otherwise called Huitzilopochtli. Having reclaimed some of the land and created a kind of platform, they raised a *momoxtli* close to the famous prickly pear tree, this being a humble temple which later on was converted into the *teocalli* which was seen by the Spaniards. Around this they constructed their huts with cane and rushes, the only material which at that time they could procure. The city was divided into four quarters or *calpulli*, in which were distributed the residences of their principal chiefs Tenoch, Mezitzin, Oceloapan, Cuapan, Ahuexotl, Xomimitl, Atototl and Xiuhcac. A part of the Tenochca or Mexicans, on account of ancient rivalries, seçeded 13 years after the foundation of the city, and went to settle on the neighboring island of Xaltelolco (Sandhill) or Tlaltelolco (Earthbank) situated in the same lake.

In the Mexican Atlas I speak more extensively of that part of the history which refers to the foundation of Mexico and particularly to the foundation of the *Teocalli* and the present cathedral.

By means of hard work in the reclaiming of land so as to include the neighboring islands, the Mexicans gave the necessary expansion to their city, which from the begining was placed under the theocratic and military government of Tenoch, a valiant and sagacious chief, who rendering tribute to the Tepanecas, was able to counteract the revengful designs of the Colhuacs. He eventually paid a last tribute to nature in the year 1443 after an adventurous life dedicated to the good of his people.

Acamapictli (He who grasps the wand): 1376 to 1396. Three years after the death of Tenoch, the founder of Mexican nationality, the Tenochcas changed their form of government,

and in 1376 they elected their first king *Acamapictli*, a noble and valiant chief who at that time was residing in Texcoco, capital of the kingdom of Acolhuacan, the chief of which was Ixtlilxochitl of the Chichimeca tribe. Uneasy and precarious was the situation of the Mexicans during the reign of their first sovereign, submitted as they were to the domination of the jealous Tepanecas. The valor and perseverance of these new settlers, who raised a city in the middle of the lake and who developed their new form of agriculture by the formation and cultivation of their artificial islands or *chinampas* and who had constituted an orderly government, inspired terror and mistrust in the heart of Tezozomoc, king of Azcapotzalco, who in the hope of discouraging them and perhaps inducing them to abandon their undertaking and decide on settling elsewere, subjected them to new tribute, which they submitted to with resignation, in the hope of obtaining their complete liberty at a later date. The Tlaltelolcos, imitating the Mexicans, also changed their form of government by electing for king a son of the despot of Atzcapotzalco named Quaquauhtipitzahuac, conduct that contrasted very strongly with the Mexicans who had elected a king from their own nation, and which still further prejudiced the mind of Tezozomoc against the latter.

In spite of their tribulations, the Mexicans did not discredit their valor in the battles which, as allies of the Tepanecas, they sustained against the people of Mixquic, Cuitlahuac, Xochimilco and Quauhnahuac (Cuernavaca) nations of considerable power.

On account of the sterility of his wife Ilancueitl, Acamapictli was married, although without repudiating his first wife, to Tezcatlamiahuatl, daughter of the lord of Tetecango, of which marriage were born Huitzilihuitl and Chimalpopoca, whilst from a slave who was a native of Atzcapotzalco he had issue Itzcoatl.

Acamapictli died in 1396, without appointing his successor.

Huitzilihuitl (Feather of precious bird): 1396 to 1417. The

nobles of the kingdom having met to regulate the elections and deliberate on the order of succession and the ceremony of coronation, they proceeded to elect a sovereign, four months after the death of Acamapictli, the election falling, to the satisfaction of the people on Huitzilihuitl, who in the act of binding on the *copilli* or crown, was annointed wiih the balsam of the gods.

The experience acquired during the previous reign, rendered the Mexicans cautious and politic, and with the idea of cementing their power they sought a remedy for their tronbles in alliances with the neighboring nations, an idea that was put into practice by Huitzilihuitl, who sent an embassy to Atzcapotzalco asklng for a princess of the Tepanecas for wife. The petition was received with the greatest benevolence by Tezozomoc, who delivered his daughter Ayauhcihuatl to the embassadors, and her marriage was celebrated with extraordinary rejoicings and feasts. Acolnahuatl was born of this marriage.

The idea which guided the Mexicans was carried out to its full effect, seeing that they obtained a reduction of tribute and other concessions from the Tepanecas.

In spite of the good relations which subsisted betwen the two nations, Maxtla, a son of Tezozomoc, fearing that the alliance with the Mexicans might prejudice the order of succession to the throne, attemped to cause the disappearance of Huitzilihuitl, and even got possession of his person; but repenting of his evil intentions, he changed his plans and had his nephew Acolnahuatl secretly assassinated.

With the politic intention of seeking relationship with other chiefs, the Mexican monarch effected another marriage, in accordance with the customs of the times, and this time married a princess of Quauhnahuac, named Mahuaxochitl, the fruit of this marriage being the great Motecuhzoma Ilhuicamina.

Huitzilihuitl prepared the future greatness of the Mexican nation, codifying the laws of his predecessors, developing the

navigation of the lake, extending the boundaries of the city, extending his political relations and influence, and organizing the social and religious matters of his people. During his reign cotton was substituted as a material for cloth in place of *ixtli* or *pita* and stone began to be employed in the building of honses.

Huitzilihuitl died in 1417 leaving behind him the gratitude of his people, and an example worth of imitation to his successors.

CHIMALPOPOCA (Smoking shield): 1417 to 1427. Most unfortunate was the reign of this monarch, who was a brother of Huitziluitl and was unanimously elected by the seniors of the nation, who obliged him at the moment of coronation and of divine anointment, to embrace the shield and to grasp his sword or *macana* in order to manifest by this new act, the purposes by which they where animated of acquiring their liberty by force of arms. Through affection for his grandson Chimalpopoca, Tezozomoc granted the Mexicans a concession to introduce the water from Chapultepec into their city; but the Tepanecas began to show jealousy of the neighbors, from the moment in which these, not satisfied with the permission already granted, presented fresh demands with a certain exacting manner to the Tepaneca king, for materials and workmen to be employed in the construction of the aqueduct, reanimating with such demands the rivalries of the two people.

Tezozomoc, after having destroyed the kingdom of Aculhuacan, or Texcoco, putting to death the good king Ixtlilxochitl and obliging his son to take refuge in Tlaxcala, finally paid the tribute of nature and left the throne to his son Tayatzin, whose legitimate rights were usurped by Maxtla, the irreconcilable enemy of the Mexicans.

The favor which Chimalpopoca showed to Tayatzin and against the usurper, greatly increased the hatred of the latter towards the king of Mexico, even to the point of insulting him, first robbing him of one of his concubines according to some

historians, or his real wife according to others, and sending him afterwards in exchange for the tributes which he received, female dresses. In the presence of such insults, Chimalpopoca, finding himself without any resources which would enable him to take his just vengeance, decided with the consent of his vassals, to die, offering himself as a sacrifice to his god; but Maxtla himself prevented the carrying out of this intention by taking him prisoner and shutting him up in a cave in Atzcapotzalco. The unhappy monarch at last managed to put an end to his life by hanging himself from the bars of his narrow prison.

ITZCOATL (Snake armed with points of obsidian) 1427 to 1440.

The son of Acamapictli and brother of the preceding king, Itzcoatl ascended the throne in virtue of the election made in his favor, which was consequent on his recognized valor and set aside the bar sinister which from his being the son of a slave rendered him ineligible for the throne.

The revengful projects which the Mexicans nursed against their tyrants, the exhortations which the old men made to the king in the solemn ceremony of his coronation, and the energetic attitude assumed by a valiant young man, nephew of the king, called Motecuhzoma Ilhuicamina, who opposed every act that might indicate debility and afterwards became a famous captain, decided the Mexicans on collecting their war resources and preparing for future events.

The king Itzcoatl sent Motecuhzoma to the Tepaneca court, first with friendly propositions and afterwards to declare war in the name of the Mexican nation, the young man showing on both ocassions, the greatest audacity as well as astuteness in order to penetrate into the enemy's wellwatched territory and present himself before the tyrant of Atzcapotzalco in the most arrogant manner.

At that same time, the Tezcocanos with their king Netzahualcoyotl had recovered their dominions, and having been brought into aliance with the Mexicans through the active mediation of the same Motecuhzoma, they also prepared them-

selves to aid in destroying the power of their enemies. After a few skirmishes, a terrible campaign was opened between the Tepanecas and the allied forces who were led by Itzcoatl, Motecuhzoma and Netzahualcoyotl, intrepid generals who showing a splendid example inspired their soldiers with their own bravery. With an invincible impetus they rushed on the Tepaneca host which rolled back and dispersed, and penetrating into Atzcapotzalco they filled it with desolation, the king Maxtla perishing at the hands of Netzahualcoyotl.

This important event, which resulted in the destruction of a nationality took place in 1428.

This victory resulted in a division of the spoil and the land, as well as the creation of a new kingdom called Tlacopan which included the Tepaneca nation, this tribe, becoming tributary to the nation which formerly held that position with respect to itself, and the whole incident eventually terminating in the memorable alliance between Mexico, Texcoco and Tlacopan, which so much contributed to the agrandizement of the Mexican nation.

The destruction of the kingdom of Atzcapotzalco was followed by the conquest of Xochimilco, Misquic and Cuitlahuac, the second Tepaneca capital, victories which were due to the indomitable courage of Motecuhzoma Ilhuicamina.

Itzcoatl died in the year 1440 after a reign which saw the beginning of the grandeur of his nation, and in which it shook off the yoke of foreign despotism, and by its conquests and prudent administration entered on the path of greatness.

Motecuhzoma Ilhuicamina (Archer of the heavens); 1440 to 1469.

With the prestige given to him by his former glory and with the hopes of a great future to which his valor and wisdom gave him a right, Motecuhzoma I ascended the throne on the 19th. of August, 1440, his coronation having been postponed until his return from a campaign undertaken against the enemies of his country, with the object of having the proper number of

prisoners to sacrifice on the solemn ocassion. From this arose the custom of the sacred war, which with the help of their allies, were afterwards undertaken by all Mexican kings, before their coronation.

The barbarous custom of human sacrifices, which as the reader will remember was instituted by the priests during their transit through Michoacan, was brought into practice as part of the coronation festivals, to which people flocked from all parts of the kingdom and even from distant countries.

Without attending to military matters, Motecuhzoma dedicated his special attention to organizing the form of his government, and created Councils of State, to which he elected men of reorganized probity and wisdom; he instituted tribunals for the prompt administration of justice, promulgated several laws intended to correct the vices and abuses of society, and lastly he decreed the construction of the great *Teocalli* and other great works which contributed to the adornment of the city. He reduced several of the neighboring towns to submission, such as the Chalcas, Coatlixtlahuacan, Mamalhuaztepec, Tenanco, Xiuhmolpiltepec, Chiconquauhco, Xiuhtepec and Totolapan, carrying his conquering armies to distant countries, such as Atotonilco, the lordship of Aculhuacan, Huastecapan on the Gulf coast, Quiahuiztla, Cempoalla, Coatlaxtlan and Amilapan on the same coast; Coixtlahuacan and Huaxyacac (Oaxaca), and several other countries. The conquest of the indomitable tribes of Oaxaca was favored by the discord between the Zapotecos and Mixtecos, who were in a constant state of dissention.

The wise government of Motecuhzoma and the efficacy of his laws, gained for him the esteem of his subjects and even of his enemies, which lasted till Oct. 1469, when death put an end to his glorious reign.

The glories of Motecuhzoma were clouded by his cruelty, which arose from his religious fanaticism, he considering it a work of piety to sacrifice his prisoners to his gods: Besides the ordinary sacrifice, which as the reader will remember consisted

in snatching from the victim who was fastened down to the sacrificial stone his palpitating heart, and presenting it whilst in that condition to the sun, a great many others called gladitorial sacrifices, were celebrated during this reign, and this came to be the most famous of all.

In the immediate neighborhood of the temple and before a numerous concourse of spectators, two gladiators, one being a prisoner and the other a Mexican warrior, would ascend a large stone called *Temalacatl*, which was laboriously sculptured and placed near the temple door. The prisoner would be tied by one foot to the stone, and armed with a shield and short sword, he would have to fight the Mexican warrior who would be better armed, until one or other fell. If the warrior should overcome the prisoner, the latter was immediately carried off, alive or dead by the priest called *Chalchiuhtepehua*, to the altar of sacrifice, where his breast was opened and his heart dragged out; if on the contrary, the prisoner overcame the Mexican and six others in succession, he was granted his life and freedom to return to his country, his arms and all the other objects of which he had been despoiled, being at once returned to him.

Motecuhzoma left a son called Iquahuacatzil and several daughters, one of whom was the mother of Axayacatl, Tizoc and Ahuitzotl.

AXAYACATL (Water face): 1469 to 1481.

The grandson of *Motecuhzoma I* inherited the throne and bound the *copilli* after his return from Tecuantepec and Coatzacoalco, where he had led his hosts with the object of proving his valor in the sacred war, and also of acquiring the necessary number of prisoners for sacrifice during the feasts of his coronation, thus following the example given by his predecessor and establishing this barbarous custom in a way that could not be avoided by his own successors.

In Tehuantepec he dispersed the numerous armies of allies who opposed his march, and extended his conquest as far as Cuatulco. Valiant like Motecuhzoma, he employed the first years

of his reign in military enterprises, reconquering Coatlaxtlan and Tochtepec, to be afterwards followed by the tribes of Huexotzingo and Atlixco.

Ever since the foundation of the city of Mexico the Tlaltelolcos and Tenochcas had been in a condition of constant rivalry, which at last exploded ont he occasion of the coronation of Axayacatl. Moquihuix, the fourth Tlaltelolco monarch, excited by his passions and by the envy which had filled his breast ever since he heard of the conquests made by the valiant Axayacatl, and by the glory which he acquired through undertaking the building of the great temple, conceived the plan of taking the city of Mexico by surprise, counting for that purpose on the asistance of the people of Chulhuacan, Chalco, Xilotepec, Toltitlan, Tenayucan, Naxicaltezinco, Huitzilopochco, Xochimilco and Cuitlahuan, whilst the troops of Quauhpan, Huejotzinco and Matlacinco would defend Tlaltelolco during the siege of Mexico. The king of Tlaltelolco had gained the reputation of a great and valiant captain in the campaigns, which as an ally of Motecuhzoma, he had made against the people of Cuatlaxtlan; and so much so, that Motecuhzoma himself, in recognition of his services, gave him a sister of Axayacatl for wife.

The conspiracy got up by Moquihuix was betrayed to the king of Mexico by his sister, who had been driven by the cruel treatment of her husband to seek a refuge for herself and children in the Mexican court. Axayacatl took prompt measures and led his warriors against those of Tlaltelolco, and taking them by surprise he penetrated as far as the market place or *Tianquistli*, but was there driven back by the Tlaltelolco troops, who then took the offensive and commenced a vigorous attack on the City of Mexico, which would have had fatal consequences for the Mexicans if the battle had not been brought to an end by the approach of night. The prisoners taken by the Tlaltelolcos during these two combats, were sacrificed in the most inhuman manner. At daylight next morning, the Mexicans, following a splendid plan of operations designed to weaken the

power of their enemy by isolating him from his allies, attacked the Tlaltelolcos with extraordinary impetus, driving them back on their city where they could not defend themselves and killing their king, who was thrown from the summit of the great *teocalli* where he had ascended to direct the military operations. The death of this sovereign put an end to the kingdom of the Tlaltelolcos, who ever afterwards remained subject to the crown of Mexico.

The Tlaltelolco monarchy lasted for 135 years, during which period four sovereigns wore the crown: Quaquahpitzahua, son of Tezozomoc, king of Azcapotzalco from 1338 to 1405; Tlacateotl, from 1405 to 1427; Cuauhtlatloa, from 1427 to 1436; and Moquihuix, from 1436 to 1437.

Once Axayacatl found himself free from his powerful enemy, he further cemented his power by punishing the principal allies of the Tlaltelolcos, raiding several tribes, such as the Matlatzincas (founders of the City of Toluca) and by continuing his wars of conquest, as in the valley of Ixtlahuacan, in which war he very nearly lost his own life; and by the conquest of the valleys of Toluca, Tochpan and Tlaximaloyan (Taximaroa), Ocuila and Malacatepec.

Axayacatl was very fortunate in all his undertakings, and only saw his army defeated by the indomitable Tarascas, in the campaign which he undertook against the kingdom of Michihuacan, shortly after the construction of the celebrated sun-stone, which today causes so much admiration and can be seen at the foot of one of Cathedral towers.

The king was occupied in the embellishment of the great teocalli, when he was surprised by death in the year 1481, shortly after the termination of his disastrous campaign in Michihuacan. In the ancient history of Mexico, Axayacatl is a prominent figure, both for his energy and administrative ability, as well as for the bold military undertakings, which, with the exception of that against Michihuacan, resulted in the consolidation of his empire and the agrandizement of his nation

by the increase of territory which came with the conquered peoples.

Axayacatl left amongst many sons, two of whom occupied the imperial throne: Motecuhzoma II and Cuitlahuac.

Tizoc Chalchiuhtlatona (Emerald that shines in the sun): 1481 to 1486.

Tizoc was elected emperor of Mexico after having distinguished himself for his valor as *tlacaelel* or general under his brother Axayacatl, and he ascended the throne and bound the *copilli* on his forehead in the midst of general rejoicings. Before this however, he undertook the usual campaign that was now demanded from all sovereigns, for the purpose of procuring prisoners for the sacrifice that was indispensable in the coronation ceremonies. The people of Mextitlan were the unfortunate victims, who on this occassion were conquered and furnished the melancholy contingent.

Rather desirous of cementing the conquests which had been made by his predecessors than of launching out into new undertakings, Tizoc gave his special attention to the organization of his government and to pushing forward the public works, amongst which may be cited the building of the temple on a much larger and more magnificent plan than that which was followed in the construction of the teocalli raised during the reigns of Itzcoatl, Motecuhzoma I and Axayacatl. This temple was terminated in the year 1547 by Ahuitzotl.

In spite of the pacific resolutions of the monarch, he found himself obliged to undertake several campaigns with the object of bringing rebellious provinces to order, such as Coatlaxtlan, Ahuilizapan, Tollocan, Chillan, Yaucuitlan, Tlata, Mazatlan and others. As an ally of Netzahualpilli, king of Tezcoco, he fought against the Republic of Huexotzinco, in which campaign the allies were victorious, after a hard fought battle.

After a brief reign of five years, Tizoc came to his death, poisoned by the lords of Tlachco and Iztapalapan, who either

through envy or old grudges, bribed some witches to give him poison. The regicides paid for their crime with their lives.

AHUITZOTL (The Otter): 1486 to 1502.

This king was the younger brother of the two preceeding monarchs and a general under the latter. He was duly elected to the throne, and according to the custom already established, he at once entered on a fresh campaign against the Mazahuas and Otoncas, during which he took possesion of their towns of Xiquipilco, Xocotitlan, Cuacuahcan and Cillan, taking 1,000 prisoners for the coronation festivities.

The Mexican Empire had now reached the period of its greatest grandeur, and in contrast to the poverty of its first years of political existence, it now possessed a vast territory which extended from the coast of one ocean to the other, populous cities, an organized police, a warlike army and well developed industries, the latter consisting of fabrics of cotton cloth, manufactures of gold, silver and handsome feathers, manufactures of skins, and many other articles which were frequently exposed for sale in the *tianquistlis* or markets, all well distributed and in due order, according to their class and quality.

The building of the great *teocalli* which had been commenced by Tizoc, was completed by Ahuitzotl in the second year of his reign, and its dedication was duly celebrated on his return from an expedition against the Huastecos, Zapotecos and other tribes, by one of the most cruel and sanguinary ceremonies related by history. Four consecutive days were employed in the sacrifice of innumerable prisoners who were slaughtered in honor of the terrible god of war, this horrible ceremony being duly opened by King Ahuitzotl himself and the principal members of his court, and afterwards continued by the priests, who buried their flint knives in the breasts of the victimes in order to drag out the heart, which was first presented to the sun and afterwards offered to their bloodthirsty divinity. Every thing was bathed in blood, from the royal robes to those

worn by the members of the court and the priests, the sacrificial stone, the pavement, the walls and the steps, all were covered with blood. *

Energetic, sanguinary and cruel, Ahuitzotl, with the help of his allies the kings of Texcoco and Tlacopan, commenced fresh campaigns against Teloloapan, Octoman, Chuiapan, Cuauhtla, Tecuantepec and Quauhtemallan, bringing new provinces under his dominion, and giving Motecuhzoma, the son of Axayacatl, an opportunity to show his valor with the troops under his command as a general.

MOTECUHZOMA II (Furious Lord): 1502 to 1520.

Motecuhzoma, to whom was given the surname of *Xocoyotzin* (the young one) in order to distinguish him from Huehue Motecuhzoma (the old one), was a son of Axayacatl, and was elected emperor with all the accustomed ceremonies, for which object he led his hosts against the provinces of Nopalla and Icatepec.

Emperor and High Priest, with a haughty, severe and superstitious disposition, he infused an absolute and despotic character into the monarchy, imposing burdens and tributes, carrying on unjust wars and creating a rigorous court ceremonial, according to which he was to be obeyed and respected like a god. During his reign he displayed a most extraordinary luxury, spending the revenues of the State with the greatest prodigality. He built large stone palaces which were profusely adorned with carvings, amongst which figured the arms of his family consisting of a tiger tearing a snake to pieces. These buildings served him for residences or for pleasure houses, and were surrounded with all the adjuncts of luxury such as baths, houses for wild animals and birds, and handsome parks like that of Chapultepec, whilst other buildings were dedicated to

* See the geographical, statistical and historical Atlas of the United States of Mexico, by Antonio García Cubas, for a description of the ancient [illegible] of Mexico in general and especially of the *Teocalli*.

the reception of the nobles and kings with whom he held alliances.

The rooms of his palaces were lined with cloth and skins covered with mosaics of feathers and different metals, amongst which figured gold and silver. Nobody was allowed to raise his eyes in the presence of the Emperor so as to see him, nor to retire from the presence except with his face to the royal countenance. Any person speaking to him had to use certain reverences and to call him Great Lord. His household consisted of three thousand persons who all held distinct offices.

This monarch, who before his exaltation to the throne had hidden his haughty character under the mask of a false humility, showed himself in his true colors on giving his first order, by which he declared the plebeans incapable of filling public offices, dimissing the household of the previous monarch and filling the offices of the court with the sons of nobles.

The festivities of his coronation were hardly concluded, when he commenced a series of campaigns that continued throughout his reign, with a battle against the people of Atlixco (1503). In the following year, he commenced a war against the Republic of Tlaxcala to satisfy old grudges, but in this case he encountered nothing but reverses. Four years afterwards he repaired these disasters in another war against the same Republic, and afterwards carried his victorious arms to the distant countries of the Mixtecos and Zapotecos. The tyrrany of Motecuhzoma knew no limits, and was exercised without respect to either nobles or plebeans; his despotic acts reached into the provinces belonging to his feudataries, and gave rise to that odium and rivalry which the sagacious Cortés knew how to improve for his own advantage and to assist him in the ruin of the Mexican Empire.

The news which the monarch recived from the Eastern provinces, touching the apparition of men of another race in the waters of his territory, accorded with the prophesy of Quetzalcoatl, transmitted by the Toltecas to the succeeding genera-

tions, and taken in combination with some natural phenomena which took place during his reign, they infused into his superstitious spirit the most melancholy and discouraging presentiments, which were still further increased by the sinister declarations which the learned Netzahualpilli and other augurs, made with respect to these extraordinary events. The history of the last Aztec monarchs being intimately connected with that of the conquest of the empire by the Spaniards, it is now time to treat of other events which were also connected with that conquest.

After the discovery of America in 1492 by the intrepid Christopher Columbus, numerous expeditions were fitted out, either with the object of discovering new continents, or with that of acquiring riches by exploring those already discovered. Those which were fitted out by Diego Velázquez, the conqueror of Cuba, that of Francisco Hernández de Córdoba, discoverer of the coasts of Yucatan (1517) and of Juan de Grijalva, (1518), who extended his discoveries as far as the mouth of the Pánuco River and gave his name to the river of Tabasco, were followed in 1519 by that of Cortés, who on the 21st. of April of that year reached the coast of Chalchiuhuecan (Veracruz). Cortés, who was a native of Medellin in the province of Extremadura, left his country at the age of 19 years, when he embarked in San Lucar de Barrameda (1504) for Española, the island lately discovered by Columbus. Having arrived at his destination, he led a roving life on account of his jealous and quarrelsome disposition; he accompanied Diego Velázquez in the expedition to reconquer and repopulate the island of Cuba (1511); and in spite of the rivalries which arose between these two and the heated discussions which took place because Cortés refused to marry Doña Catalina Juárez, who eventually became his wife, he obtained from the Governor of Cuba the command of the squadron which had been fitted out for the conquest of Mexico, a country of which marvelous stories were told. Cortés sailed with a fleet under his command on the 18th.

of February 1519, consisting of eleven vessels large and small, manned by 110 sailors, with 10 battery guns and four falconets, 553 soldiers, including 32 artillerymen and 13 arquebussiers, 200 Cuban Indians and 16 mounted men.

For the due organization of this force, Cortés apointed Francisco de Orozco, captain of artillery; Anton de Alaminos, Chief Pilot; and Alonso Hernández Portocarrero, Alonso de Avila, Diego de Ordaz, Francisco de Montejo, Francisco de Morla, Francisco de Saucedo, Juan de Escalante, Cristobal de Olid, Juan Velázquez de Leon and Pedro de Alvarado to be captains of companies, and he hoisted a standard on the flagship, which showed a red cross and the legend: "Let us follow the cross, and under this sign we will conquer."

After passing through a heavy gale, the squadron arrived at the island of Cozumel, where Pedro de Alvarado commenced his accoustomed depredations, and Cortés began to give evidence of the two leading traits in his character, by gaining the good will of the natives, thus showing his political sagacity, and at the same time proving his religious zeal by overthrowing the idols on the altars and planting the emblem of Christianity.

On the banks of the river Grijalva in Tabasco, Cortés defeated (26 of March 1519) a numerous Indian army, in a battle fought on the site which still bears the name of "*Santa María de la Victoria.*" He took possession of the territory and converted the Indians into subjects of His Majesty the King of Castille, in whose name he received propitiatory offerings. It was in this part of the country where he attached to himself the celebrated Malintzin, afterwards called Doña Marina, a woman who was destined to be of the very greatest service to him, in his dangerous enterprises.

Continuing his voyage, Cortés sighted the coast of Chalchiuhcuecan and on Holy Thursday (21st of April 1519) he reached the island which he called San Juan de Uloa, landing on the sandy beach of the mainland on the following day.

He at once named a Municipal Council, founded the city of "Villa Rica de la Veracruz" and received from the same corporation the title of Captain General.

An embassy presented itself from the Cacique of Zempoala, bringing friendly propositions to the Spanish General, and an invitation to visit the cacique in his capital. Cortés accordingly marched his little army to Zempoala where he was well received, and with great inward satisfaction he acquired important information which was to be of great use to him in his future campaign. He there discovered the strained relations that subsisted between the tribes living under the despotic yoke of Motecuhzoma, and the vehement desire which animated them all to shake off this oppressive rute.

The prudent and far seeing Spaniard offered the cacique his friendship, and informed him at the same time that he had been commissioned by the great Emperor and powerful King of Spain to exterminate the oppressor and give liberty to the oppressed. The alliance with the Zempoaltecas was the first act of his political life, and made a profound impression on the envoys of Motecuhzoma who had been thrown into prision by the cacique of Quiahuiztlan, for having accused his people of treachery. They were at once placed at liberty by orders of Cortés, who sent them back to the Mexican Monarch, in order to reestablish his confidence.

The religious zeal of Cortés, which would not allow any delay in the destruction of the native altars, combined with the conspiracy got up in his own camp, would have entirely destroyed his magnificent plans if he had not arrested the evil by his energetic attitude with respect to the Indians, and his severity towards his own country–men, whom he punished in accordance with the heinousness of their crime. With the object of depriving the dissafected and cowardly of all hopes of retroceding from the enterprise, he carried out one of the boldest and most heroic acts ever known; which was, to dismantle his ships and sink them in the harbor. This deed which gave

rise to the saying "He burnt his ships" is one of those that have made this great conqueror famous in history.

From Zempoala the Spanish army followed its march to Tlaxcala, by way of Xalapa, Xicochimalco, Xocotla and Iztacamaxtitlan. The Republic of Tlaxcala, which had preserved its independence in spite of the efforts of its powerful enemy, the Emperor of Mexico, incited by the valiant Xicotencatl, declared war against the Spaniards, who up to this time had been able to march through the country without meeting any serious difficulties. A few skirmishes in the frontier of the Republic, demonstrated the hostile attitude of the Tlaxcaltecas, but a pitched battle was soon fought, in which, owing to the superiority of their organisation and arms, the Spaniards remined victorious, although at the same time the Tlaxcaltecas discovered that their enemies were by no means immortal, nor the horses invincible monsters. The Tlaxcalteca priests having met in council after the battle, declared that the Spaniards were children of the sun, to whom they owed all their force, and therefore ought to be attacked by night to be defeated. In consequence of this council, the Tlaxcaltecas made a night attack on the Spaniards, but being again defeated with heavy loss, the Indians themselves, convinced of their own inferiority and of the falseness of the prophecies made by their augurs, sacrificed the latter to their gods and made propositions of peace and friendship to the Spaniards. These were accepted, and thus was formed the terrible alliance which was afterwards to bear such fatal consequences on the fortunes of the Mexican Empire. Cortés made his solemn entry into Tlaxcala, on the 23rd. of September, 1519. The valiant Xicotencatl, who could not bring himself to accept the pacific destruction of his Republic, continued to be the mortal enemy of the Spaniards.

From Tlaxcala, Cortés marched on to the great city of Cholollan, where under the pretext of castigating a conspiracy, the existence of which is by no means certain, he ordered a barbarous slaughter of the people, delivering up the temples and

dwellings to fire and pillage. History with its inflexible judgement, makes a distinction between the acts of necessary energy, however cruel they may appear, when required by the success of a great enterprise, and the useless crimes committed for the triumph of an idea.

Amongst the qualities which greatly distinguished the conqueror of Mexico, and to which Spain owes one of its richest triumphs; figure the valor, the audacity, the astuteness and perseverance, which characterized Cortés, bnt this glory is to a great extent clouded by a number of acts of cruelty such as that above mentioned.

Cortés boldly continued the march on Mexico, starting on the first of November, his army being largely increased by the presence of troops furnished by the Tlaxcaltecas, Huexotzincas and Totonacos, and crossing over the saddle between the two snowy mountains, he found himself at the head of large army on the borders of the wide and picturesque valley of Anahuac, with its immense lake, from whose waters arose the great Tenochtitlan, object of the Spaniard's ambition.

Motecuhzoma, the irresolute Mexican monarch, had allowed the Spanish army to approach the capital, merely contenting himself by sending emmissaries to Cortés with weakly worded demands that he should retire. Far from attending to any such demands, but rather, still more excited by the spectacle which the panorama of the valley presented to his avaricious eyes, Cortés continued advancing by way of Ameca, Culhuacan and Iztapalapan, until he arrived at the very suburbs of the Aztec capital. There he was received by 4,000 courtiers richly dressed, who came out to meet the Spanish army as far as the first break in the causeway of Iztapalapan, and afterwards, Motecuhzoma himself, surrounded by his Court, issued forth to meet them at the place called Huitzilian, where at a later date the Church and Hospital of the Immaculate Conception was built, at present known by the the name of Jesus Nazareno. On the 8th of November 1519, Cortés made a solemn and pompous

entry into the city in company with the Emperor Motecuhzoma, and the Spaniards were astonished at the spectacle offered by this city with its twenty thousand houses, wide and well formed streets, some of which were on land and some on water, its gardens, temples, markets, squares, and dense population.

In spite of the attention lavished on Cortés, he determined to make the Mexican Monarch a prisoner, moved thereto by the distrust which he felt for Motecuhzoma and his people, and by the suggestions of the Tlaxcaltecas; by the invasion of the territory of the Allies which had just been carried out by the Mexican general Quauhpopoca, who attacked the small Spanish garison of Veracruz and wounded the Governor Escalante, and lastly because the head of a Spanish soldier was carried around from town to town in order to prove to the people that the invaders were but mortal. Motecuhzoma remained in the Spanish quarters, and the fetters were not taken off him until Quauhpopoca and fifteen other Mexicans had been burned alive by the Spaniards themselves. A short time after this event, Cortés imprisoned the Kings of Culhuacan and Tlacopan, obliging Motecuhzoma to render homage to the King of Spain and to deliver him a large amount of gold.

Once the Spanish General found himself in full possession of the city, he began to collect the taxes and to agitate the abolition of the sanguinary rites of the Mexicans, a suggestion that again placed his enterprise in serious danger of failure. Such a profanation as this excited the priests and the people to such a degree, that Motecuhzoma himself spoke seriously to Cortés, giving it as his opinion, that seeing he had already fulfilled the mission confided to him by his Monarch, he should at once return to his country. With his usual political astuteness, Cortés declared that he was quite willing to comply with the wishes of the Mexicans, as soon as the ships which he required to replace those destroyed in the waters of Veracruz, should have been built.

As a fact, Cortés was having these vessels built at the time, but for purposes of his own, he was delaying the construction as long as possible, when he received news of the arrival of Panfilo de Narvaez on the Mexican coast at the head of 1,400 men; having been sent by Diego Velázquez to deprive Cortés of his conquest, make him a prisoner, and take him to Cuba for trial. In this difficult situation Cortés showed all his usual activity and boldness, leaving on the pages of history, one of the most brillant events of his life. Leaving Pedro de Alvarado in command of the city, with only a small garrison of 80 soldiers, he made an arrangement with Gonzalo de Sandoval, the new Governor of Veracruz; started hurriedly with a force of 250 men, and took Narvaez by surprise on a dark and stormy night. Having taken Narvaez prisoner, he returned to Mexieo on the 24th. of June 1520, with his army re–inforced by the soldiers he had taken from Narvaez and some fresh Indian allies, forming a total of 1,300 soldiers, 100 horses, 18 cannon and 2,000 Tlaxcaltecas allies.

Meanwhile the imprudence of Pedro de Alvarado, who shortly before the return of Cortés, had ordered a barbarous slaughter of Mexicans, whom he had surprised in a festivity, produced a great conflict in the city, which Cortes found in a state of insurrection with the Spaniards besieged in their own quarters. The presence of Cortez by no means intimidated the Mexicans, but neither did the the terrible position of matters frighten the Spanish Chief, and he penetrated into the city to protect his own men against the fury of the people who were fighting for their liberty. A terrible struggle commenced which lasted for several days, until Motecuhzoma, found himself obliged to offer his services as mediator between his own subjects and the Spaniards, for which object, having put on his royal robes, he appeared on the roof of the building in which he was imprisoned and from thence addressed his people. Hardly had he pronounced the first word, when he fell mortally wounded under a shower of stones and arrows thrown by the Mexicans

themselves, and after suffering for three days, he died on the 30th. of June 1520.

CUITLAHUAC. 1520.

Motecuhzoma was accompanied in his imprisonment by some of his nobles, amongst whom was found the valiant and astute Cuitlahuac, a worthy rival of Cortés, and who owed his liberty to the necessity the Spaniards were under of obtaining provisions, for which purpose they had sen thim forth to have the markets opened. Once he found himself free from the power of the Spaniards, he improved the unexpected opportunity to take back his command in the army, and to place himself at the head of the defenders of their country.

Having passed the first moment of stupor, caused by the melancholy events above related, and animated the Mexicans by the presence of their intrepid Chief, the renewed the attack with fresh vigor, and the struggle became every day more violent and bloody, until the Spaniards found themselves obliged to determine on a retreat, which was carried out on the night following the first of July 1520. The stormy weather and the innumerable breaks which had been made in the causeways, rendered this retreat both dangerous and difficult, but by the force of the astonishing prodiges of valor, the Spaniards and Tlaxcaltecas fought their way under a perfect storm of arrows and darts, from section to section of causeway and from break to break, some perishing under the terrible arms of their enemies, others saving themselves by swimming and all in the midst of the most frigtful disorder. Cortés himself, had many narrow escapes, and he suffered the pain of seeing one his best captains, Juan Velázquez de Leon succumb at his side under the arrows of the enemy.

The dispersed Spanish army at last gained the causeway outside of the city limits, and as well as I can understand it, halted at the foot of the Teocalli of Tlacopan, which formed a good strategic point for their defense and reorganisation. I believe this to be the real point of their halt, and not the well

known tradition that it was at the foot of the tree in Popotla which was only a witness of that famous retreat, known in history under the name of the Noche Triste.

Once the city was free of its tyrant through the heroic efforts of Cuitlahuac, this valiant chief was proclaimed Emperor and displayed in his new position the same bravery and activity which he had before shown. He had the Spaniards closely pursued, as they continued their retreat in the direction of Tlaxcala, and he reinforced his army and improved their arms with the object of continuing the campaign. On the sixth day after commencing the retreat, and after a painful march full of privations and hampered by their wounded, the Spaniards were taken by surprise in the neighborhood of Otompan, by an army of 40,000 Indians.

In this painful situation, Cortés with his usual courage, determined to conquer or die and after a short and vigorous addres to his soldiers he launched himself at their head against the enemy. His military education had shown him that the weakest point was precisely where the imperial standard was elevated, and he well understood that for the Mexicans the result of the campaign entirely depended on the preservation or loss of this important emblem.

Once he formed this plan, Cortés, accompanied by his principal captains, attacked with extraordinary impetus the formidable group that escorted the imperial standard, and at once got possession of it killing the general who had it in his grasp. The superstitious Indians immediately fled in all directions, abandoning an abundant booty to their enemies. This battle of Otumba took place on the 18th. of July 1520.

Once the Spaniards reached Tlaxcala, they were tenderly cared for by their allies.

Meanwhile Cuitlahuac, did not limit his actions to the reparation of the disasters already suffered, but actively engaged in the fortification of the city. He sent presents to the different provinces of the Empire, to which he offered many de-

sired privileges, and made great efforts to arrange an alliance with the people of Tlaxcala, which he nearly carried out and which would doubtless have still further hampered the Spaniards. He died after a heroic reign of 80 days, a victim to the epidemic of small-pox which was introduced by a negro belonging to the expedition of Narvaez.

CUAUHTEMOC (Descending Eagle) 1520–1621.

Cuauhtemoc was the son of Ahuizotl, and had reached the age of twenty five when he ascended the throne. His valor, his great patriotism and his indomitable character were revealed from the first moment in which he gave his orders for steps to be taken with a view to opposing a most formidable resistance to the Spaniards. He fortified the city, organized his army and displayed great activity in providing for all the necessities which could present themselves in the difficult circumstances under which his nation found itself.

Meanwhile Cortés, in Tlaxcala, continued his preparations with the object of renewing his operations for the final conquest of the Aztec capital. For this purpose he renewed his alliance with the Tlaxcaltecas, and improving the lesson taught by the disaster of the Noche Triste, he ordered the brigantines to be built under the direction of the master carpenter Martin López.

On the 28th. of December 1520, he left Tlaxcala at the head of an army composed of 750 infantry, 120 arquebusiers and more than 150,000 Indian allies from Tlaxcala, Cholollan and Huetzotzingo, and following the road by way of Tezmelucan and Coatepec, he reached Texcoco on the 31st. of the same month.

During his stay in this city he increased his forces with a contingent of new allies, he had the valiant Tlaxcalteca Chief, Xicotencatl, hung on account of his hostility to the Spaniards, and he repressed a conspiracy which had been got up amongst his own men, against his life and against his best captains. He hap the brigantines which had been constructed in Tlaxcala, taken

to pieces and transported to Texcoco on the shoulders of Indians, and after launching them he put the artillery on board and completed their fitting out, after which they sailed from Texcoco, in the direction of the capital of the Aztec Empire.

In the different reconnaissances which he made around the city, he subjected several provinces which formerly were vassals of the Mexican Monarch, and was continuallly obliged to fight small parties of Indians in skirmishes of more or less consequence. On the 30th. of May, 1521, he established the siege of the great city, first occupying the Fort of Xoloc at the point were the causeways from Iztapalapan and Coyoacan met and covering those from Tlacopan and Tepeyac with the divisions commanded by Alvarado and Olid.

From this moment, the skirmishes between outposts were substituted by pitched battles which became general all round the city. The roar of the pieces of artillery and of the arquebusses fired by the Spaniards, united with the shouts with which the Mexicans advanced to the combat, launching clouds of spears and arrows. These battles were continually renewed: the Spaniards would attack with the greatest valor and be defeated with an energy as great as their own; they would again advance to the attack, and again be obliged to retire by the unexampled bravery of the Mexicans, and these assaults would be repeated day by day with the same heroic attack and defense on their respective sides.

Seeing the necessity of putting an end to this situation, Cortés gave orders for a general assault, and himself advanced at the head of a column attacking one of the most dangerous points, leaping over ditches and earthworks, at the moment when the Indians charged with the greatest impetuosity, until he was personally attacked, thrown down and wounded, and was only saved by thy bravery of the Captain Olea, who unfortunately paid for this brave act with his own life.

The difficult and dangerous situation of the Spanish army was greatly aggravated by the knowledge which the Indian al

lies had obtained of the prophecies made by Mexican priests touching the complete destruction of the Spaniards within a period of eight days, a prophecy which was supposed to be inspired by their god Huitzilopochtli, and so discouraged them that they attempted to desert and leave the Spaniards to their own fate. With his usual sagacity Cortés prevented this fatal desertion by saying to his allies: "Let us wait without fighting for eight days, and you will then be convinced that the oracles are an imposture." The time having expired, the Indians were convinced of the falsity of the prophecy made by the Mexican priests and renewed their alliance with the Spanish conqueror with greater heartiness than ever.

In order to bring this disastrous war to an end, which was already too far prolonged, and finding that the indomitable character of Cuauhtemoc would not give way to the Spanish demands that he should give uy the city, notwithstanding the offer that his authority should be confirmed, Cortés ordered the complete destruction of all the houses as fast as they fell into the power of the assaulting parties, thus reducing the lines of defense to ever narrowing limits. Thanks to this new plan of operations, the defendants did not possess at the beginning of August, more than the Northern part of the city, and a few canals which were navigated by numerous canoes full of armed Indians.

The situation of the Mexicans had now become insupportable, both for the vigorous siege maintained by the "conquistadores," as well as through the horrors of the epidemic and famine which reigned throughout the city, and the valiant Cuauhtemoc determined to issue from the city so as to carry on the war with greater freedom on the Northern causeway. For this purpose he embarked with his family in a canoe in the direction of that causeway, followed by many other canoes full of people, but the whole expedition was pursued and overtaken by the best sailing vessel in the squadron, which was under the command of Gonzalo de Sandoval. On seeing the

guns pointed in his direction, the arrogant young monarch exclaimed: "I am Cuautemoc: take me before your General, and all I ask is that you shall not harm my wife or those who accompany me."

When this unhappy monarch, whose heroic deeds made him worthy of a better fate, was taken before the Spanish General, he spoke as follows to his conqueror: "I have fulfilled my duty defending my people, until I could do no more; I come before you by force, and now that I am in your power do with me as you please:" and drawing the dagger that Cortés carried in his belt, he added: "Seeing that I have not been able to die in defense of my people, take this dagger and kill me." The conqueror tried to console him, praising his valor and extraordinary efforts in defense of his country, he made him many promises and gave orders that his wife and the other persons who acompanied him in his flight should be taken to him.

As soon as the Mexicans heard of the capture of their sovereign, they gave up the struggle and the Spaniards took complete possession of the city on the 13th. of August, 1521, after a siege which lasted seventy five days.

The capitulation of the capital was shortly afterwards followed by the submission of all the provinces of the Empire, and at a later date, by that of all the other nations of Anahuac, whose origin was buried under the ruins of the Mexican Empire. The consideration with which Cuauhtemoc was treated in the first days of his captivity and which certainly was due to to him for his excellent qualities was very soon forgotten in the covetousness of the conquerors, who were never satisfied with the prizes that fell into their hands. Hernando Cortés left a new and indellible stain on his fame, when he allowed himself to be persuaded to submit the illustrious Mexican Emperor to torture, as well as the king of Tlacopan, Tetlepanquetzal. He had the feet of both sovereings burnt in order to draw from them a confession of the place in which the royal treasure was hidden. Whilst they were suffering these torments the king

of Tlacopan directed a supplicating glance towards the Emperor as if asking permission to reveal the secret, but Cuauhtemoc, with a haughty gesture said to him: "Am I by chance on a bed of roses?" This wonderful endurance filled Cortés with horror of his own act, and he gave orders for the torture to cease.

The complete destruction of the city in order to raise on its ruins what was to be the capital of New Spain; the distribution of land amongst the conquerors, assigning to each one of them a certain number of Indians, under the name of "repartimientos;" the destruction of the idols and other objects of worship; the distribution of the treasure, to collect which, nothing had been omitted as I have above shown; the election of an Alcalde and members of the City Council; the division of the City between Spaniards and Indians; the construction of a Catholic temple on the ruins of the Teocalli and the sending of expeditions for the conquest of distant countries, such as Oaxaca and Tehuantepec, were the first tasks undertaken by Cortés, and were followed by an expedition under his own command to Hibueras, with the object of suppressing the rebellion raised by Olid. On this expedition he carried the two captive kings of Mexico and Acolhuacan with him; but tired with the care of his illustrious prisoners during such a long and painful journey, he had them hung in Izancanac on the 26th. of February, 1525, adding another stain to his escutcheon with this useless double crime, and putting an end to the Mexican dynasty which had been founded in 1376 by Acamapictli, in the person of the illustrious Cuauhtemoc.

UNDER SPANISH GOVERNMENT.—1521 TO 1821.

The immense territory which was occupied by the different nations conquered and subjected to the crown of Castille in this region of America, was known under the title of New Spain. These nations, which constituted one of the richest of the Spa-

nish colonies, were: 1st., the three crowns, that of México with its numerous provinces, that of Acolhuacan or Texcoco, and that of Tlacopan; all of which were free and independent but acting together in all important business, and above all in war; 2nd., many Republics, of which the principal were, those of Tlaxcala, Chollollan and Huejotzingo; 3rd., powerful kingdoms like of those of Michoacan, Tonallan and Jalisco to the West and North West; those of Mixtecapan, Zapotecapan, Tehuantepec and Mayapan (Yucatan) to the East and South East.

The successive expeditions undertaken by the conquerors, extended the Spanish dominions over the Northern regions inhabited by many other tribes, the peaceful conquest of the indomitable Tarascos being due to the spontaneous submission of the King of Michoacan.

The arrival in the country of the first Franciscan fathers in 1524, forms the most notable date in the history of the early years of the Spanish domination. These virtuous and worthy missionaries came to the country to put an end to the excesses of the conquerors, and to protect the Indians; to which object the fathers dedicated themselves with a zeal worthy of all praise, and to their instruction in letters besides several different arts. To them is due the construction of temples, schools, and hospitals, they were those who showed the Indians an example of humble, humane and true christianity, and persuaded them to abandon their ancient rites. They softened the rigor of the conquerors, and lastly, they completed the spiritual conquest of the people, thus securing in a spiritual manner the triumph which had been obtained by force of arms.

Unfortunately this evangelical conduct was not enough to prevent the crimes of the infamous Nuño de Guzman, who during his expedition to conquer Jalisco, ordered, in his passage through Michoacan, the burning of the King Caltzontzin alive.

These Friars whose names are worthy of a permanent fame, were Fray Martin de Valencia, the Provincial; Fr. Francisco de Soto, Fr. Martin de Coruña, Fr. Juan de Juarez, Fr. Anto-

nio de Ciudad Rodrigo, Fr. Toribio de Benavente, commonly known under the name of Motolinia; Fr. Garcia de Cisneros, Fr. Luis de Fuensalida, Fr. Juan Rivas, Fr. Francisco Ximenez and the lay brothers Andres Cordoba and Juan de Palos, who came in place of Bernardino de la Torre, who was not thought worthy of this apostolic mission. On their arrival in Mexico, these pious missionaries met five others of their own order, who had previously arrived, not under apostolic authority, but under a special permission from their own superiors. Two of these, were Fr. Juan Tecto and Fr. Juan de Aora. Many other monks have left illustrious names in this country, both for their personal virtues as well as for their great efforts to alleviate the unhappy condition of the Indians, and some of them have left us works which form real historical monuments, such as; Fr. Bernardino de Sahagun, Fr. Bartolomé de las Casas, Fr. Pedro de Gante, Fr. Jerónimo de Mendieta, Fr. Diego Duran, His Excellency Fr. Don Juan de Zumárraga, first Archbishop of Mexico; His Excellency, Don Vasco de Quiroga, first Bishop of Michoacan, through the resignation of this high dignity by Fr. Luis de Fuensalida, one of the first apostles to come to New Spain; Fr. Juan de Torquemada, Fr. Junipero Serra, Fr. Sebastian de Aparicio, Fr. Domingo de Betanzos, Fr. Diego Basalenque and many others too numerous to mention.

The country was at first placed under the administration of Governors and "Audiencias;" but such were the acts of despotism, the rivalries, the abuses and intrigues of the Spaniards in the stormy times of the first "Audiencia" presided over by Nuño de Guzman, that the Spanish Court determined, notwithstanding the improved conduct of the second, to constitute the colony of New Spain into a Viceroyalty. Amongst the 61 Viceroys who governed the colony, the following are worthy of being remembered for the success of their government and for the improvements which they carried out:

Don Antonio de Mendoza, the first Viceroy, who put a stop to the abuses of the landed proprietors and to their ill treat-

ment of the Indians; he established a press, thus giving Mexico the glory of being the first city in the New World to exercise this important art. The first work to be published was the "Spiritual Scale of Juan Climaco" by Juan Pablos in 1535, and was translated from the Latin by Father Juan de Estrada. During the government of Don Antonio de Mendoza, the colleges of Santa Cruz, in Tlaltelolco, another one for girls and a college in San Juan de Letran were founded through the efforts of Father Pedro de Gante; coinage was commenced as well as work in the mines of Zacatecas and Guanajuato, and expeditions were sent to make discoveries in the Northern regions. During this Vice-royalty also, Nuño de Guzman was prosecuted and sentenced to prison, but he afterwards died in exile (1537), and during this period it was also that the great Protector of the Indians, Fray Bartolomé de las Casas arrived in the country. Many other remarkable events occured during this period, of which the most important were: the death of Pedro de Alvarado in the mountains of Mochiltiltic, that of Hernando Cortés (1547) in Castilleja de la Cuesta (Spain), and that of the Archbishop Zumárraga in 1848: Popocatepetl, threw out ashes that destroyed crops and trees, and the cities of Guadalajara and Valladolid now Morelia, were founded. In 1550, the viceroy departed for Peru which country he had been commissioned to pacify and bring to order.

Don Luis de Velasco, a worthy successor of Don Antonio de Mendoza. The most notable events of his period of government were: the emancipation of 150,000 Indians who had been kept in a state of slavery, it being worthy of remembrance that when the Viceroy was told that such a step would cause the ruin of the mining companies, he answered: "*that the liberty of the Indians was worth more than all the mines in the world;*" the foundation of the University of Mexico in 1553; the establishment of a tribunal for the trial of thieves; the foundation of a hospital for Indians and of several colonies; and the division of waste lands among the Indians. During this period, the mines of

Fresnillo and Sombrerete were discovered; Barlolome de Medina in Pachuca discovered the treatment of ores which is called the patio process (1557); in 1563, the city of Durango was founded, and lastly, the city of Mexico was inundated for the first time during the Spanish domination. Don Luis de Velasco died in this city on the 31st. of July 1564, and his good administration and personal virtues gained for him the title of *Father of his Country.*

Don Martin Enriquez de Almanza, fourth Viceroy. The establishment during this administration, in the year 1571, of the terrible tribunal of the Inquisition, forms a remarkable contrast with the prudent and beneficent acts of the Viceroy, both with regard to his subjection of the Huachichile Indians, as in his efforts against the terrible epidemic of the *Matlalzahuatl* a special fever that only attacked Indians and carried off more than two millions of them. In this period was founded the Church of San Hipolito; the Company of Jesus established itself in Mexico, opening the Seminary of St. Peter and St. Paul; the school of Saints was also founded, and the first stone was laid, in 1573, of the beautiful Cathedral of Mexico. The government of D. Martin Enriquez de Almanza, came to an end in 1580, through his being sent to take the Viceroyalty of Peru.

Don Luis de Velasco, son of the second Viceroy. Endowed with the same virtues and following the example of his father, his good administration contributed greatly to the progress of New Spain. He established factories of woolen cloth, he arranged terms of peace with the Chichimecas, he sent families from Tlaxcala and Franciscan monks to the colonies of San Luis, Mezquitic, San Andrés and Colotlan, he planted the handsome Alameda of Mexico, and decreed several measures in favor of the Indians. D. Luis de Velasco who was a native of Mexico, governed New Spain up to November 1595, when he was promoted to the Viceroyalty of Peru.

Fray Payo de Rivera, twenty seventh viceroy and Archbishop of Mexico. The following words of a historian show the

virtues that adorned this illustrious personage: "He so understood how to temper justice with mercy, and liberality with economy, that his government will serve as a example to future ages."

During his administration, the mint began the coinage of gold (1675), the causeway to Guadalupe was paved, the aqueduct for introducing water into the same town was constructed, the viceregal palace was renewed and completed, bridges were built over the canals, the work of the drainage was supposed to be completed, and the Hospital of Betlemitas was founded.

The Church of San Agustin having been destroyed by fire, the Viceroy had the architect prepare new plans for another temple still more sumptuous, In 1678, the pirates sacked the town of Campeche, took possession of the island of Carmen and threatened the Port of Alvarado. The court of Spain, having admitted the resignation which the virtuous Fray Payo Enriquez de Rivera presented of both the religious and civil governments, this descendant of one of the most illustrious families, left Mexico on the 30th. of June 1681, after having divided all his money among the different charitable establishments of the city, and leaving his library to the Oratory of San Felipe Neri.

Don Gaspar de la Cerda Sandoval Silva y Mendoza, Count of Galve, 30th Viceroy, whose administration was one of the most remarkable for the prudence and justice of its measures, and for the important events which occured in that period. Amongst those that are most worthy of mention, we have the following: in 1689, an expedition was sent to make a reconnaissance of the Bay of San Bernardo in Texas, and to drive the French from there, but found they had been already killed by the Indians. In the same year, the Tarahumares rebelled, killing the Franciscan missionaries and three Jesuits; the rebelion was suppressed by one of the Fathers of that Order, called Juan María Salvatierra. In 1690, the French were defeated in Guarico by

the Governor of Santo Domingo, with the help of Mexican troops who had been sent by the Viceroy. In 1691, the province of Texas was brought into subjection, and after a short time Panzacola was founded, and a convict colony settled there. The populace of Mexico, created a riot on account of the scarcity of provisions, setting fire to the Viceregal palace, the Municipal buildings and the shops in the great square. The greater part of the archives were lost in this riot and the rest were saved at the peril of his life by the learned Mexican, Don Carlos de Sigüenza y Góngora, and the Viceroy found himself obliged to take refuge in the Convent of San Francisco. After the due investigations wich were made on the following day eight of the principal leaders of the riot were executed, others were sentenced to be flogged, and the Indians to the loss of their hair. In the following year the Spaniards and English attacked the French in the island of Española, destroying their forts and taking 81 pieces of artillery. In the same year, Sor Juana Ines de la Cruz, a famous Mexican poetess, and a nun of the Order of Saint Jerome died.

Don Juan de Acuña, Marqués de Casa Fuerte, 37th. Viceroy, was one of the most notable governors for his public and private virtues, for his great talent in government and model administration. His administration lasted, from the 15th. of October 1722 to the 17th. of March 1734, on which date he died. During this administration, the buildings of the Custom House and of the Mint were constructed.

Don Agustin de Ahumada y Villalon, Marqués de las Amarillas, renowned in the wars of Italy. He was the 42nd. Viceroy of New Spain, and made his administration remarkable through the disinterested reforms which he zealously carried out for the correction of abuses. During his period solemn feasts took place to celebrate the concession which the pope had granted to the City of Mexico, placing it under the patronage of the Virgin of Guadalupe; the Iguana mines were found in the new kingdom of Leon, though the fame of their riches very soon

died out, and in 1758 the volcano of Jorullo was formed, when the ashes reached as far as Queretaro. The Viceroy died at Cuernavaca of apoplexy, on the fifth of February 1760.

Don Carlos Francisco de Croix, Marqués de Croix, 45th. Viceroy, succeeded the Marqués de Cruillas. His administration was remarkable for its strict honesty. During this period and in obedience to orders received from the Court, the Jesuits were expelled from Mexico on the 25th. of June 1767, and they issued from their Convent of the Profesa after communicating and singing the Te Deum. Amongst the Mexicans who shed glory on this Company, we may mention the Fathers Alegre, Clavijero, Landivar, Maneiro, Cavo, Lacunza and Marquez.

Don Antonio María Bucareli y Ursúa, 46th. Viceroy, whose government made itself remarkable for the felicity of its administrative acts, so much so, that according to the Historical and Geographical Dictionary, the period of his government was one of uninterrupted felicity for New Spain. Amongst the prominent works of this administration, may be cited: the placing of a loan among the merchants of the foundation of the mint; this loan amounted to $ 2.800,000, including the four hundred bars of bullion belonging to the Conde de Regla, of which 300 were dedicated by the count to the foundation of that useful and beneficent establishment, the Mont de Piete; the female Asylum was endowed and established; a poor asylum and orphan asylum were opened; the important drainage works were energetically pushed forward and almost terminated; the Castle of Perote was completed; besides which the Castle of San Diego at Acapulco was constructed, and that of San Juan de Ulúa greatly improved; the mining tribunal was established, and explorations were made in the quicksilver mines, which were being worked for account of the Royal Treasury; the aqueduct leading to the fountain called el Salto del Agua was concluded, and many other important improvements were carried out. It was during the period of this administration that the learned Mexican Don Joaquin Velazquez de Leon, took ob-

servations in Lower California of the transit of Venus across the sun, and father Alzate was commissioned to discover the quicksilver mines. The Viceroy Bucareli, died on the 9th. of April 1779, leaving a grateful remembrance in Mexican history, and was buried in the Sanctuary of Guadalupe.

Don Matías de Galvez, 48th. Viceroy, who made his administration remarkable by his disinterested and earnest efforts to improve the public works. He gave great attention to the repairs of the streets of the capital, had the foul canals cleaned out; fostered the Academy of Fine Arts, which had been established by his predecessor the Viceroy, Don Martin de Mayorga, and during his administration, imported the collection of plaster copies of the most famous Greek and Roman statues, which still adorn the galleries of the Academy; he gave great attention to the organization of the police and conceded privileges to the printer Don Manuel Valdes for the publication of a gazette.

Don Bernardo Galvez, son and immediate successor of the preceding viceroy. He showed his zeal for the public good and his personal liberality by distributing large sums of his own money to the poor people during the period of scarcity caused by the loss of the crops, a charitable work which was greatly assisted by the Archbishop of Mexico as well as the bishops of Puebla and Michoacan. During his administration, and with the object of giving occupation to the poor people, the reconstruction of the beautiful palace of Chapultepec and of the two handsome towers and atrium of the Cathedral, were proceeded with, whilst the works of the causeways were also attended to.

This illustrious governor died in the flower of manhood, in the archiepiscopal palace in Tacubaya, on the 30th. of November, 1786.

Don Juan Vicente de Güemez Pacheco de Padilla, second Count de Revillagigedo. This was the 52nd. Viceroy and perhaps the most notable, of those who governed New Spain, as was well

proved by his well arranged measures for the cleanliness and embellishment of the capital. He reorganized the police, established public lighting, attended to the cleanliness and paving of the streets, meeted out justice to the evil doers, and persuaded the lower classes to dress better; he regulated the cutting of forests and promoted the construction of the roads to Veracruz, Toluca and Acapulco; he established two weekly mails; afforded help to the maritime expedition of Malaspina, for the exploration of the coast of Fuca and the Behring straits, and gave decided protection to public instruction, including the geography and history of the country, the learned Martin de Sesé, commencing during this administration, his lectures on botany in the garden of the palace. The private instructions which the count left for his successor, demonstrate the good judgement and profound un derstanding of this illustrious Governor.

Such were the Viceroys, who deserve special mention in history for their important administrative acts. (See the chronological notice of the Governors of this country, which appears at the end of this section).

New Spain, which comprehended all the territory that now forms the Mexican Republic as well as that which was ceded to the United States under the treaties of Guadalupe and La Mesilla, extended from 15° 30′ up to 40° 12′ of N. latitude, and its boundaries with the United State were formed by the Red and Arkansas rivers, which at that time separated New Mexico and the province of Texas from Louisiana, which was than much more extensive than at the present day. On the South the territories of Oaxaca, Veracruz, Tabasco and Yucatan, adjoined the kingdom of Guatemala or ancient Quauhtemallan.

HOUSE OF AUSTRIA.

Reign of the Emperor Charles V. of Germany and I of Spain. 1521 to 1556.

GOVERNORS.

1. Don Hernando Cortés, Governor and Captain General. In 1524, on account of his expedition to the Hibueras, against Cristobal Olid, he left the Treasurer, Alonso de Estrada and Lic. Alonso de Zuazo in charge of the Government, joining with them the accountant Albornoz. At a subsequent period, Salazar and Chirino joined Lic. Zuazo in the Government, and in 1525, Estrada and Albornoz were readmited. 1521 to 1526.

2. Lic. Luis Ponce, Governor commissioned to investigate the administration of Cortés, 1526.

3. Lic. Marcos Aguilar, who substituted Lic. Ponce in his duties, on the death of the latter, 1526.

4. Alonso de Estrada and Gonzalo de Sandoval, governed jointly for the sake of peace, notwithstanding that Lic. Aguilar, for the same reason as his predecessor appointed Estrada to succeed him, 1527.

5. Alonso de Estrada, Governor, 1527.

"AUDIENCIAS."

6. *First Audiencia.* President Nuño de Guzman; Judges, Juan Ortiz de Matienzo and Diego Delgadillo, Alonso de Parada and Francisco Maldonado. These two last died shortly after their arrival in Mexico. 1528 to 1531.

7. *Second Audiencia.* President, D. Sebastian de Fuenleal, Bishop of Santo Domingo; D. Vasco de Quiroga, afterwards Bishop of Michoacan; Lic. Juan de Salmeron, Lic. Alonso Maldonado and Francisco Ceinos, 1531 to 1535.

VICEROYS.

1. Don Antonio de Mendoza. Conde de Tendilla, 1535 to 1550.

2. Don Luis de Velasco, a gentleman of the House of the Constable of Castilla. 1550 to 1564.

Reign of Philip II.—1556 to 1598.

3. Don Gaston de Peralta. Marqués de Falces, 1566 to 1568.

4. Don Martin Enríquez de Almanza, 1568 to 1580.

5. Don Lorenzo Suárez de Mendoza, Conde de la Coruña, 1580 to 1583.

6. Don Pedro Moya de Contreras. Archbishop of México, 1584 to 1585.

7. Don Alvaro Manrique de Zúñiga. Marqués de Villa Manrique, 1585 to 1590.

8. Don Luis de Velasco. son of the second Viceroy, 1590 to 1595.

9. Don Gaspar de Zúñiga y Acevedo. Conde de Monterey, 1595 to 1603.

Reign of Philip III.—1598 to 1621.

10. Don Juan de Mendoza y Luna, Marqués de Montesclaros, 1603 to 1607.

11. D. Luis de Velasco, for the second time, when he was granted the title of Marqués de Salinas, 1607 to 1611.

12. Fray García Guerra, of the Order of Preachers, Archbishop of Mexico, 1611 to 1612.

13. Don Diego Fernández de Cordoba, Marqués de Guadalcazar, 1612 to 1621.

Reign of Philip IV.—1621 to 1665.

14. Don Diego Carrillo de Mendoza y Pimentel, Marqués de Gelves, Conde de Priego, 1621 to 1634.

15. Don Rodrigo Pacheco y Osorio, Marqués de Cerralvo, 1624 to 1635.

16. Don Lope Diaz de Armendariz, Marqués de Cadereyta, 1635 to 1640.

17. Don Diego López Pacheco Cabrera y Bobadilla, Duque de Escalona and Marqués de Villena, Grandee of Spain, 1640 to 1642.

18. Don Juan de Palafox y Mendoza, Bishop of Puebla, 1642.

19. Don García Sarmiento de Sotomayor, Conde de Salvatierra, Marqués de Sobroso, 1642 to 1648.

20. Don Marcos de Torres y Rueda, Bishop of Yucatan, 1648 to 1649.

21. Don Luis Enríquez de Guzman, Conde de Alva de Liste and Marqués de Villaflor, 1650 to 1653.

22. Don Francisco de la Cueva, Duque de Alburquerque, and Grandee of Spain, 1653 to 1560.

23. Don Juan de Leiva y de la Cerda, Marqués de Leiva and Ladrada, and Conde de Baños. 1660 to 1664.

24. Don Diego Osorio de Escobar y Llamas, Bishop of Puebla, 1664.

25. Don Antonio Sebastian de Toledo, Marqués de Mancera. 1664 to 1673.

Reign of Charles II.—Under a Regency from 1665 to 1667. As king 1667, to 1700.

26. Don Pedro Nuño de Colon y Castro, Duque de Veraguas, Marqués de Jamaica and Grandee of Spain, 1663.

27. Fray Payo Enríquez de Rivera, of the Order of St. Agustine, Archbishop of México, 1673 to 1680.

28. Don Tomás Antonio Mánrique de la Cerda, Marqués de la Laguna and Conde de Paredes, 1680 to 1686.

29. Don Melchor Portocarrero Laso de la Vega, Conde de la Monclova, 1686 to 1688.

30. Don Gaspar de la Cerda Sandoval Silva y Mendoza, Conde de Galve, 1688 to 1696.

31. Don Juan Ortega Montañez, Bíshop of Michoacan, 1696.

32. Don José Sarmiento y Valladares, Conde de Moctezuma y de Tula, 1696 to 1701.

HOUSE OF BOURBON.

Reign of Philip V.—1700 to 1746.

In 1724 he abdicated the crown in favor of his son Louis and re-assumed it on the death of the latter within the ye

33. Don Juan de Ortega Montañez, for the second time, 1 to 1702.

34. Don Francisco Fernández de la Cueva Enríquez, D de Alburquerque, 1702 to 1711.

35. Don Fernando de Alencastre Noroña y Silva, Du Linares, and Marqués de Valdefuentes, 1711 to 1716.

36. Don Baltasar de Zúñiga Guzman Sotomayor y M Marqués de Valero, 1716 to 1722.

37. Don Juan de Acuña, Marqués de Casa Fuerte 1734.

38. Don Juan Antonio Vizarron y Eguiarreta, A of México, 1734 to 1740.

39. Don Pedro de Castro Figueroa y Salazar, D Conquista and Marqués de Gracia-Real, 1740 to

40. Don Pedro Cebrian y Agustin, Conde de 1742 to 1746.

Reign of Ferdinand VI.—1746 to 1

41. Don Juan Francisco de Güemez y Horca de de Revillagigedo, 1746 to 1755.

42. Don Agustin de Ahumada y Villalon. Amarillas, 1755 to 1760.

Reign of Charles III.—1759 to

43. Don Francisco Cajigal de la Vega, 1

44. Don Joaquin de Monserrat, Marqué to 1766.

45. Don Cárlos Francisco de Croix, Marqués de Croix, 1766 to 1771.

46. Don Antonio María Bucareli y Ursúa, Bailiff of the Order of St. John, 1771 to 1779.

47. Don Martin de Mayorga, 1779 to 1783.

48. Don Matías de Gálvez, 1783 to 1784.

49. Don Bernardo de Gálvez, Conde de Gálvez, son of the last Viceroy, 1785 the 1786.

50. Don Alonso Núñez de Haro y Peralta, Archbishop of México, 1787.

51. Don Manuel Antonio Flores, 1787 to 1789.

Reign of Charles IV.—1788 to 1808.

52. Don Juan Vicente de Güemez Pacheco de Padilla, Conde de Revillagigedo, 1789 to 1794.

53. Don Miguel de la Grúa Talamanca, Marqués de Branciforte, 1794 to 1798.

54. Don Miguel José de Azanza, 1798 to 1800.

55. Don Félix Berenguer de Marquina, 1800 to 1803.

56. Don José de Iturrigaray, 1803 to 1808.

Reign of Ferdinand VII, from 1808 to 1821.

This king survived twelve years after the consummation of Mexican Independence.

57. Don Pedro Garibay, Field Marshal, 1808 to 1809.

58. Don Francisco Xavier de Lizana y Beaumont, Archbishop of México, 1809 to 1810.

59. Don Francisco Xavier de Venegas, 1810 to 1813.

60. Don Félix María Calleja, Conde de Calderon, 1813 to 1816.

61. Don Juan Ruiz de Apodaca, afterwards Conde del Venadito, 1816 to 1821.

62. Don Juan O'Donojú.—Did not take possession of his post.

From the time of the Viceroy Don Miguel José de Azanza, certain symptoms began to show themselves against the viceregal government; the conspiracy which was betrayed to the Viceroy and suppressed by him in 1798, clearly showed the ideas that were gaining ground in the colony against the metropolis, and which continued to develop, favored by the emancipation of the Anglo-American colonies as well as by the uneasy and disordered condition of Spain through the French invasion and the scandalous dissensions which arose between Charles IV and his son Fernando. To these causes ought to be added the violent deposition and arrest of the Viceroy Iturrigaray, to the great detriment of the authorities in general, by certain members of the Audiencia and a few Spaniards, who believed that, in opposing himself to the recognition of the Junta de Sevilla, the Viceroy was preparing to proclaim the independence of Mexico.

All these ideas of emancipation continued manifesting themselves during the subsequent administration, and resulted in the arrest and death of Lic. Verdad, who died by hanging in the prison of the archiepiscopal palace of Mexico, during the government of the octogenarian viceroy, Don Pedro Garibay; the apprehension of several individuals complicated in a conspiracy, which was discovered in Morelia towards the end of 1809, and the object of which had been the formation of a Commission to govern the colony; and lastly, the proclamation of independence on the 16th. of December 1810, by the Rector of Dolores Don Miguel Hidalgo y Costilla, at the time when the lieutenant general Don Francisco Javier de Venegas was viceroy of New Spain.

The way for this glorious proclamation had been prepared by the meetings held in Querétaro, favored by the ex-alderman Don Miguel Domínguez and by his wife the famous Doña Josefa Ortiz, the pretext for which meetings had been the cul-

tivation of literature. These meetings were attended by the captain Don Ignacio Allende, Don Juan Aldama, Don Mariano Abasolo, who were in garrison at San Miguel el Grande; the lieutenant D. Francisco Lanzagorta, captain D. Joaquin Arias, civilians Don Emeterio and Don Epigmenio González, besides many other private persons, amongst whom figured several ecclesiastics.

Once the conspiracy was discovered, the alderman and his wife were thrown into prison, but the latter managed to notify Allende by means of a messenger, who not finding the captain in San Miguel, communicated his missive to Don Juan Aldama. This gentleman at once set out for Dolores where he arrived on the 16th. of September, and presented himself to Hidalgo who at that moment was in company with Allende, the latter having already acquired information of what was going on through some correspondence which he had himself intercepted. At the dawn of the same day, which was a Sunday, Hidalgo accompanied by his brother Don Mariano, by the two captains and by ten armed men, proceeded with the greatest activity to set the prisoners at liberty, to call his parishioners together by ringing the bells and to increase his force with the peasantry until he got together 300 men, and with this force he took the road to San Miguel el Grande, on the road to which and in the town of Atotonilco he raised as a flag for his little army a cloth on which was painted the Virgen of Guadalupe.

This small army continued to receive reinforcements as it passed through Celaya and other towns, so that when it presented itself before Guanajuato to summon the Intendente Riaño to surrender, it already had a strength of 50,000 men.

After a desperate battle in the celebrated building of the Alhóndiga de Granaditas during which the Intendente lost his life, the Spaniards surrendered, abandoning a rich booty to the insurgents, who occupied the fortress and killed all its defenders on the 28th. of September.

From Guanajuato Hidalgo marched on Michoacan, and en-

tered the city of Valladolid, now Morelia, without any resistance whatever on the 17th. of October; once in the city, he increased his forces with three provincial batallions and the regiment of Pátzcuaro; he appointed Don José Mariano Anzorena Intendente, he filled up several vacant posts and obliged the ecclesiastical government to raise the edict of excommunication that been pronounced against himself by the Bishop Abad y Queipo. From Valladolid, he marched on the 19th. of the same month, detaining the army in Acámbaro to pass the troops in review, on which occasion they proclaimed him Generalísimo. He then continued his march on Toluca and reached the forest of Las Cruces, where he had a sanguinary battle on the 30th. of October with the royalist forces. In spite of the superior discipline of the latter, they found themselves obliged to retreat before the numerous but badly armed hosts of Hidalgo. At the same time the revolutionary force, short of ammunition and threatened by the forces of Calleja which were advancing by forced marches from San Luis Potosí, found themselves obliged to commence a retreat, during which they were overtaken in the neighborhood of Aculco and suffered a bad defeat, with the loss of all their artillery and a large number of prisoners.

After this disaster, Hidalgo retired from Valladolid, and Allende, Aldama, Abasolo and Jiménez, to Guanajuato, where they were attacked by Calleja and obliged to abandon the city. Meanwhile Hidalgo at the head of the forces that he could muster in Valladolid, marched on Guadalajara which had just fallen into the possession of the independent chief Don José Antonio Torres. Don Ignacio Allende there joined Hidalgo and with the greatest activity procured an increase of his army as well as all the resources necessary for the campaign. An attempt was made to organize a government, and Lic. José María Chico was appointed Secretary of Religion and Justice, and Lic. Ignacio López Rayon, Secretary of State.

In proportion as the insurrection extended over the Northern provinces, the efforts of the viceregal government to sup-

press it were increased. The troops of the Brigadier General Calleja were joined to those of General Cruz, and marched towards Guadalajara, whilst the independents, obeying the opinion of Hidalgo rather that of Allende, marched to meet them, and on the 16th. of January 1811, formed a camp at the bridge of Calderon, were they waited for the enemy with a force of 80,000 infantry, 20,000 cavalry and 96 pieces of artillery. The disciplined forces of Calleja, well equipped and better armed, made a vigorous attack on the following morning in three columns, and after a desperate combat which lasted six hours without any decided advantage on either side, the royalists at last gained the victory, which was greatly due to the burning of the stores of ammunition belonging to the insurgents, who immediately dispersed in different directions. Hidalgo and the other chiefs fled to Zacatecas with the intention of attempting to reform their forces.

After the triumph of the royalist arms in Guadalajara, San Blas, Tepic and Sinaloa, the chiefs who sustained the cause of independence, retired to Saltillo, from which place they returned the decree of amnesty sent to them by General Cruz, declaring their intention to prosecute the war. In order to obtain money and arms from the United States, Hidalgo in company with the principal chiefs, excepting Don Ignacio López Rayon and Liceaga who remained with a few men in Saltillo, took the road to the frontier, but being betrayed by Elizondo, one of their chiefs, they were arrested in Acatita de Bajan on the 21st of May, 1811, and after being taken to Chihuahua, were there executed. The first to suffer were Allende, Aldama and Jiménez on the 28th of June 1811 and afterwards Hidalgo who was shot on the 31st. of July following, all of them dying with the greatest serenity, and leaving an illustrious fame to posterity. Thus terminated the first period of the war of independence.

The independent chiefs Rayon and Liceaga, who remained in Saltillo, were the only ones to keep alive the idea of liberty;

sometimes fighting the royalists, at another time establishing in Zitácuaro the Supreme Junta, of which Rayon was the President and the members were Liceaga and José Sixto Verduzco. It was then, that illustrious man, the great figure of our national history, Don José María Morelos y Pavon, the rector of Carácuaro, appeared, whose valor, audacity and military talents placed him in the first rank amongst the chiefs of the independence.

During this second period, it is truly wonderful to glance the eye over the group of patriots who gave their help to Morelos in that magnificent work, appearing like worthy satellites of the great star, whose military genius displayed itself on the field of battle. These great men were Matamoros, the Galeanas, the Bravos, Martínez, Mier y Terán, Victoria and many others, whose presence and valuable cooperation gave an extraordinary impulse to the insurrection.

An uninterrupted series of campaigns which almost always resulted in favor of the insurgent forces, constituted the military life of Morelos. He laid siege to the Port of Acapulco in November 1810, he defeated the Governor in El Veladero, and immediately afterwards at Tres Palos, dispersed the royalist army under Paris on the 4th, of January 1811; finding himself obliged to raise the siege of Acapulco, he marched to Chilpancingo, which place he took possession of after defeating the commandant Garrote in Chichihualco; after joining Don Leonardo, Miguel and Nicolas Bravo in Chilpancingo, he marched on Tixtla, defeating the royalist forces under Fuentes on his way and pursuing him as far as Chilapa. In this first campaign which lasted nine months, he dispersed the royalist army in all the country South of the Mescala.

Continuing his operations he defeated Musitu in Chiautla, he organized his forces and divided them in three divisions; one under the command of Don Miguel Bravo, another under Don Hermenegildo Galeana, and himself took command of the third. He then marched on Izúcar where he was joined

by the valiant Matamoros; from thence he passed on to Cuautla, which city he placed under the command of Don Leonardo Bravo; in San Gabriel, he picked up several pieces of artillery, and pushed on to Tasco, which had already been taken by Galeana. From that point in company with Bravo and Matamoros he rapidily proceeded to the help of his forces which had been defeated in Tecualoya, and in his turn, he defeated Porlier and followed him up so closely, that in Tenancingo he was obliged to spike his artillery. Being now in possession of the whole of the hot country, Morelos entered Cuautla at the head of three thousand man, commanded by Matamoros, Bravo and Galeana, and throwing his scouts out as far as Chalco.

Finding himself so closely attacked, the Viceroy Venegas sent an army of twelve thousand men under the command of the active Calleja, to attack Cuautla; the insurgents fortified the place with 30 pieces of artillery, and the siege was established on the 19th. of February 1812. Calleja launched his columns of attack against the defenses, but saw them beaten back after a desperate combat of six hours, through the heroic efforts of the defenders; these attacks were renewed day by day against the new trenches that the insurgents raised; the royalists having received a small reinforcement composed of the troops that in Izúcar had been defeated by Don Miguel Bravo, made a closer investment of the city, until Morelos finding himself in a desperate situation, he broke the siege by a bold sally at dawn of the 2nd. of May 1812, after a siege that lasted for 70 days.

This siege, which is so memorable in our history, greatly increased the prestige of the famous Morelos.

The royalists having caught Don Leonardo Bravo, he was taken to Mexico and there shot, notwithstanding the proposals of the insurgents to exchange him for a large number of prisoners. The death of this patriot gave rise to the most heroic action related in history. On communicating the news to Nicolás, the son of Don Leonardo Bravo, Morelos gave him

orders to shoot 300 prisoners who were in his power by way of reprisal. Don Nicolás formed these prisoners in line and informed them of the order given by Morelos, but ceding at that moment to his generous impulse, he spared their lives and set them at liberty.

With these new campaigns, Morelos continued his series of triumphs; he occupied Chilapa, after defeating the royalist Generals Cerro and Añoeve, and he went to the help of Trujano who was besieged in Huajuapan were he was defending himself heroically. On his arrival he defeated the besiegers, Regules and Caldera, on the 23rd. of July; and afterwards proceeding to Tehuacan, he sent Don Nicolas Bravo to attack a convoy which was on its road to Puebla under the escort of Colonel Labagui, who died in the skirmish leaving the entire convoy in the hands of the insurgents. Morelos then marched on Orizaba which he took on the 26th. of October, and although on his return he lost his artillery in an action on the mountains of Aculcingo against Captain Aguila, he soon reorganized his forces, and starting from Tehuacan at the head of five thousand men, he attaked and took Oaxaca on the 25th. of November, in which battles Don Guadalupe Victoria, Galeana, Matamoros, Bravo, Sesma and Mier y Teran greatly distinguished themselves.

Don Francisco Javier Venegas having been recalled to Spain, in 1803, he was succeeded as Viceroy by Lieutenant General Don Félix María Calleja.

After the taking of Oaxaca, Morelos marched on Acapulco on the 12th. of April 1813, when he finally obtained possession of that important port and terminated his second and most fortunate campaign. This was followed by the instalation of the first Mexican Congress in Chilpancingo on the 14th. of September, which two months afterwards, on the 6th of November, proclaimed the independence of the country and decreed the emancipation of the slaves.

Morelos commenced his third and last campaign with an expedition to Valladolid, in which city he wanted to install the

Congress, and thus widen his sphere of action in the provinces of Guanajuato, Guadalajara and San Luis. Having arrived before the walls of the city, on the 23rd. of December 1813, he summoned the garrison to surrender, but the royalists having vigorously attacked his rear guard, he suffered a complete defeat and found himself under the necessity of retiring to Puruaran, were he left Matamoros with 3,000 men. The latter was afterwards attacked by Iturbide, defeated and made a prisoner, and afterwards taken to Valladolid where he was shot on the 3rd. of February 1814.

The Congress, which was continually pursued by the royalists, was constantly obliged to change its residence, and on the 22nd. of October, in Apatzingan, it proclaimed a provisional constitution, appointing Liceaga, Morelos aud Coz to exercise the Executive power.

The defeat and execution of Matamoros, were followed by other lamentable events, the defeat and death of the valiant Galeana, the imprisonment and shooting in Puebla of the patriot Miguel Bravo, and lastly, the irreparable loss of the great Morelos. After several reverses caused by disagreements amongst the patriots, this distinguished chief, hoping to save the members of the Congress whom he was escorting, and give them time to escape, faced the forces of Concha and Armijo in Texmalaca, but being defeated, and betrayed by a deserter from his ranks called Carranco, he was taken to Mexico, where he was tried and sentenced to be shot, a sentence that was carried into effect in San Cristobal de Ecatepec on de 22nd. of December 1815, thus depriving the insurrection of its most illustrious chief.

After the death of Morelos, the cause of Mexican independence was sustained by different chiefs who were operating in different parts of the country; Mier y Teran in Tehuacan, Victoria in the North and Coasts of Veracruz, Osorno and others in the Plains of Apam, Guerrero and Bravo in the Mixtecas, and to the South of the Mexcala, Rayon who fortified

the mountain of Cóporo, Vargas in Michoacan, Father Torres in the Bajío of Guanajuato and Victor Rosales in Zacatecas.

The Viceroy Calleja followed up his attacks on the rebellion with great energy, for which purpose he could count on a disciplined army of 40,000 men; he reestablished the Company of Jesus and the Inquisition, he exiled several persons of position, shut up in a convent Doña Leona Vicario, the wife of the distinguished patriot Don Andrés Quintana Roo, as well as the wife of the Alcalde of Querétaro, Doña Josefa Ortiz; he imposed heavy taxes and showed such a tyrannical disposition, that the Spanish Court was obliged to replace him with Don Juan Ruiz de Apodaca, who took possession of the government on the 20th of September 1816.

The patriot forces continued suffering reverses, when a new star appeared on the horizon in the person of the valiant Spanish soldier, Don Francisco Javier Mina, who after fighting bravely against the invaders of his own country, determined to defend the independence of Mexico, tired of the tyranny of Ferdinand VII. His expedition from the time of his landing near Soto la Marina, until his execution in sight of the fort of San Gregorio, was rapid and brilliant as a meteor. On the 15th of April 1817, he landed with 500 men recruited in the United States and made a rapid march into the interior of the country.

He successively defeated the royalist commanders Villaseñor and Armiñan; he reached the fort of Sombrero, where he joined forces with the brave patriot Pedro Moreno; immediately after he dispersed the force of Ordoñez near San Felipe, in which battle Ordoñez and Castañon perished; he attempted to surprise the city of Leon; he retired from the fort of Sombrero where he was besieged by the division of Liñan; breaking through the enemies lines he continued his expedition through the Bajío and the Sierra Gorda, fatiguing the royalist army with his rapids movements, until surprised by Orrantia in the rancho of Venadito, he was taken prisoner, carried to Silao, confined in Liñan's camp and finally shot in sight of the

fort of los Remedios on the 11th. of November 1817. Father Torres continued defending El Fuerte, until the 1st of January 1818, when that stronghold was taken by the royalist, after a most horrible butchery, from which Father Torres fortunately escaped.

At the same time that new reinforcements arrived from the peninsula to fight against the insurgents, the latter suffered continual reverses, such as the defeat of Bravo in Cóporo and Padre Torres in the Bajío, the imprisonment of Verduzco and Rayon, and the shooting of other patriots such as Pagola and Vermeo. The cause of liberty appeared to be at its last gasp, but the indomitable Guerrero still remained to sustain it in the mountains of the South. This redoutable chief who since 1811, had fought under the orders of Morelos, continued the truggle, and in the year 1819, obtained 20 consecutive victories over his enemies.

The reestablishment of the Constitution of 1812 in Spain, which was sworn to in Mexico on the 31st. of May, 1820, and by virtue of which, the Inquisition was again suppressed and the liberty the Press declared, divided the opinions amongst the Spaniards, some of them declaring themselves in favor of the Constitution and others against it, and these dissensions resulted advantageously for the cause of the independence, and were duly taken advantage of by the patriots.

It was at this period that the viceroy Apodaca promoted Iturbide to the rank of Brigadier, and confided to him the command of the expedition sent to the South to fight the forces under Guerrero. Iturbide marched from Mexico on the 16th. of November 1820, and after several encounters with the insurgents, in which the latter did not always get the worst of it, Iturbide started an active correspondence with the illustrious Guerrero, which eventually resulted in a conference at Acatempa on the 10th. of January 1821, in which the two chiefs agreed to proclaim the independence of Mexico, and

Iturbide published on the 24th. of February the programme of Iguala.

This conspiracy was seconded by many towns, and obtained the adherence of Filisola, Bustamante, Dominguez, Barragan, Negrete and other chiefs. Iturbide at once started on a campaign during which he obliged the cities of Valladolid, Querétaro and Puebla to capitulate, and laid siege to Mexico, where some officers and others, rebels, deposed the viceroy Apodaca, substituting him on the 5th of July 1821, with the sub-Inspector of artillery, Don Francisco Novella.

On the 13th of the same month, Don Juan O'Donojú, the 62nd. and last viceroy of New Spain, arrived in the Port of Veracruz. As soon as he was informed of recent events, he issued a proclamation and opened communications with the insurgents. In consequence of this, Iturbide proceeded to Córdóba, where he held a conference with O'Donojú, which resulted in the Treaty of Cordoba, that with a few modifications, confirmed the programme of Iguala.

Iturbide made his triumphant entry into Mexico, on the 27th. of September 1821, at the head of the independent army, that being the date on which the Spanish Domination in this country terminated after having lasted 300 years.

Once the Mexican independence triumphed, the partisans of Iturbide obtained his elevation to the imperial throne by the Assembly which he had called together. The Empire lasted but a short time as in the following year (1822), a revolutionary movement was headed by General Santa-Anna in Veracruz, who proclaimed a republican form of government and drove Iturbide from the throne. The latter afterwards attempted to regain possession of the sceptre, returning from exile to carry out his plans, but was arrested on landing in Soto la Marina, and shot in Padilla in the year 1823.

The Federal Republic was established on the ruins of the short lived Empire of Iturbide, the first President being General Guadalupe Victoria in 1824. On the fourth of October of

the same year, the Constitution was promulgated, with a form very similar to that of the United States of North America. During the struggle for independence two parties han been formed in the country: the first being formed by the Spaniards who were centralists, and the second being the republican party or otherwise Federal party. The division of these two parties explains the frequent changes of government in the Republic, and the constant agitation which it has suffered. One of these parties desired to take the country back to the colonial period, whilst the other on the contrary, desired to push it forward in the path of political and social reform of the most liberal character. The two parties succeeded each other in power, mostly by means of revolution, from the year 1828 to 1846.

The United States of America took advantage of these dissensions and in that year declared war upon the Mexican Republic. This nation debilitated by its civil wars, and very inferior to its neighbor in population and resources of all kinds, nevertheless accepted the challenge, and after a year of hard struggle and of sacrifices, made peace with the Northern Republic, ceding to the latter a considerable part of its territory, although at that time uninhabited.

After the peace was concluded with the United States, the Mexican Liberal party maintained itself in power, realizing its theories of government, except during the years 1853 to 1855 during which General Santa-Anna governed the country as Dictator. In the year 1857, the Constituent Assembly proclaimed a new constitution, which is that at present in force; liberty of worship was proclaimed, the Church and State were separated, clerical property was declared to belong to the nation and the Civil Registry offices were established.

All these reforms were obtained by the liberal party in the midst of civil struggles, and have now come to be accepted by the great majority of Mexicans.

In 1861, when the Government of the Republic was occupied with the reorganization of public administration, a coa-

lition was formed between England, France and Spain to declare war on Mexico and interfere in its private affairs. Shortly after the establishment of this alliance, England and Spain retired from the project and France, whose sovereign wanted to establish a monarchy in Mexico, was left alone in the enterprise. Mexico accepted the challenge, and from 1862 up to 1866 fought against her powerful enemy, only allowing the French to be masters of the ground they actually occupied. Having taken possession of the capital and the principal cities of the country, the French constituted it into an Empire, and placed the crown on the head of Maximilian of Hapsburg, Archduke of Austria. Weakened after a long struggle, by the incessant attacks of the Mexicans, the French abandoned the Republic at the beginning of 1867. After the departure of the French, Maximilian took refuge in the city of Querétaro, and after a long siege was taken prisoner by the Republican army and shot on the 19th. of June 1867.

Don Benito Juárez, of Indian origin but endowed with great intelligence and energy, was President of the Republic during the stormy periods of the Reform and the French invasion, and on the 15th. of July, 1867, he made his entry into the capital of México at the head of the victorious Republicans.

Juárez remained in power up to the day of his death, which took place in the middle of the year 1872. Don Sebastian Lerdo de Tejada was his immediate successor and occupied that elevated post until the end of 1876, when he was driven out by the revolution of Palo Blanco which proclaimed the non re-election of the President of the Republic. General Porfirio Diaz ascended to the Presidency in May 1877, and delivered over the government to the newly elected General Don Manuel González, on the first of December 1880. General Porfirio Diaz returned to power in December 1884 and has continued in power ever since by election of the people.

Below we give a table of the Governors of Mexico, from the consummation of the independence, up to the present date:

REGENCIES.

The first was formed by the Generalísimo Don Agustin de Iturbide, Don Juan O'Donojú, Don Manuel de la Bárcena, Don Isidro Yáñez, and Don Manuel Velázquez de Leon. 1821 to 1822.

The second by Don Agustin de Iturbide, Don Isidro Yáñez, Don Miguel Valentin, the Conde de Casa de Heras and the Brigadier D. Nicolás Bravo, 1822.

EMPIRE.

Iturbide with the title of Agustin I. 1822 to 1823.

PROVISINAL GOVERNMENT.

The comission charged with the Executive was formed by Don Nicolás Bravo, Don Guadalupe Victoria and Don Pedro C. Negrete, as incumbents, with Don José María Michelena and Don Miguel Domínguez, as deputies. 1823 to 1824.

FEDERAL REPUBLIC.

General Don Guadalupe Victoria. 1824 to 1829.
General Don Vicente Guerrero. 1829.
Lic. José María Bocanegra, 1829.
Don Pedro Vélez, President of the Supreme Court of Justice, General Don Luis Quintanar and Don Lúcas Alaman, 1829.
General Don Anastasio Bustamante, 1830 to 1832.
General Don Melchor Múzquiz, 1832.
General Don Manuel Gómez Pedraza. 1832 to 1833.
Don Valentin Gómez Farías, 1833 to 1834.
General Don Antonio López de Santa-Anna, 1834 to 1835,
General Don Miguel Barragan, 1835 to 1836.
Don José Justo Corro, 1836 to 1837.

CENTRAL REPUBLIC.

General Don Anastasio Bustamante, 1837 to 1839.
General Don Antonio López de Santa-Anna (substitute). 1839.
General D. Nicolás Bravo, (substitute), 1839.
General Don Anastasio Bustamante, 1839 to 1841.
Don Javier Echeverría, 1841.

DICTATORSHIP.

General Don Antonio López de Santa-Anna, 1841 to 1842.
General Don Nicolás Bravo, 1842 to 1843.
General Don Antonio López de Santa-Anna, 1843.
General Don Valentin Canalizo, 1843 to 1844.

CENTRAL REPUBLIC.

General Don Antonio López de Santa-Anna, 1844.
General Don Valentin Canalizo, 1844.
General Don José Joaquin de Herrera, 1844 to 1845.
General Don Mariano Paredes y Arrillaga, 1846.
General Don Nicolás Bravo, 1846.

FEDERAL REPUBLIC.

General Don Mariano Salas, 1846.
Don Valentin Gómez Farías, 1846 to 1847.
General Don Antonio López de Santa-Anna, 1847.
General Don Pedro María Anaya, 1847.
General Don Antonio López de Santa-Ana, 1847.
Lic. Don Manuel de la Peña y Peña, as President of the Supreme Court, 1847.
General Don Pedro María Anaya, 1847 to 1848.
Don Manuel de la Peña y Peña, 1848.
General Don José Joaquin de Herrera, 1848 to 1851.

General Don Mariano Arista, 1851 to 1853.

Don Juan B. Ceballos, as President of the Supreme Court of Justice, 1853.

DICTATORSIP.

General Don Manuel María Lombardini, 1853.

General Don Antonio López de Santa-Anna, 1853 to 1855.

General Don Rómulo Diaz de la Vega, 1855.

General Don Martin Carrera, 1855.

General Don Juan Alvarez, 1855.

General Don Ignacio Comonfort, 1855 to 1857.

CONSTITUTIONAL PRESIDENTS.

General Don Ignacio Comonfort, 1857 to 1858.

Lic. Don Benito Juárez, as President of the Supreme Court of Justice, 1858 to 1861.

Lic. Don Benito Juárez (elected), 1861 to 1872.

Lic. Don Sebastian Lerdo de Tejada, as President of the Supreme Court, 1872.

Lic. Don Sebastian Lerdo de Tejada (elected), 1872 to 1876.

General Porfirio Diaz (provisional), 1876.

General Juan N. Méndez (substitute), 1876.

General Porfirio Diaz (elected), 1876.

General Manuel González, 1880 to 1884.

General Porfirio Diaz, 1884.

During the period from 1857 to 1880, when the conservative party was in power, the following persons, served the country as Presidents in the capital of the Republic.

General Don Félix Zuloaga, 1857.

General Don Manuel Robles Pezuela, 1868.

Lic. Don José Ignacio Pavon, 1858.

General Don Miguel Miramon, 1858.

General Don Félix Zuloaga, 1859.

General Don Miguel Miramon, 1859 to 1861.

From the year 1863 to 1867, the French intervention esta-

blished the Imperial government, and whilst waiting for the arrival in Mexico of the Archduke Maximilian of Austria, the following gentlemen exercised the Executive power as regents: Bishop Juan B. Ormaechea, General Don Juan N. Almonte and General Don Mariano Salas.

EMPIRE.

Maximilian of Austria with the title of Maximilian I, 1864 to 1867.

NOTE.—The Author of this work prepared the extract of the new mining code which appears at the beginning of Article XI. and in which that important branch of the national industry is treated, but as there are many persons who will desire to have more details of this law, the translator has included the whole of it, and it will be found in pages 205 to 248.

THE END.

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